Journal of
THE CHEMICAL SOCIETY

Nomenclature Report
Indexes
and
Title-pages

1953

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LONDON: THE CHEMICAL SOCIETY, BURLINGTON HOUSE, W.1

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* *Included with Journal as from January*, 1951.

ABSTRACTS

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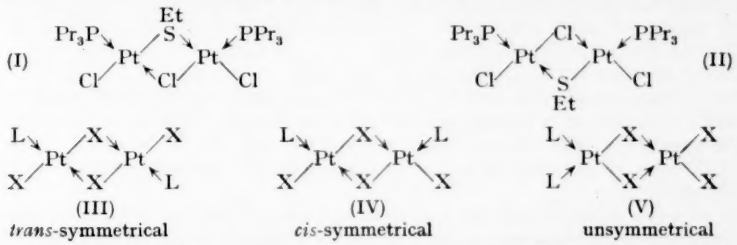
EDITORIAL REPORT ON NOMENCLATURE, 1953.*

Inorganic

Ions.—When discussing the conversion of the octahedral ion $[Co\ en_2Cl_2]^+$ into $[Co\ en_2ClX]^+$ it was necessary to discuss intermediate formation of the optically inactive ion $[Co\ en_2Cl]^{++}$. The term "cobaltium ion" was used for the intermediate containing quinquecovalent cobalt (*J.*, 1952, 2696), "for temporary convenience"; analogy was with "carbonium," the name applied to what is left when a maximally covalent form of carbon, CR_4, loses one ligand R with its bonding electron. The qualifying phrase signified that this nomenclature was subject to revision, inasmuch as attention must shortly be paid to the nomenclature of ions in general.

Bridged Complexes.—The structures (I) and (II) required differentiation (*J.*, 1952, 2363).



This was done by extending the nomenclature used for (III)—(V), so that (I) was named *cis*-PSP-*cis*-symmetrical-dichlorobistri-*n*-propylphosphine-μ-chloro-μ′-ethylthioplatinum, and (II) became the *cis*-PClP compound.

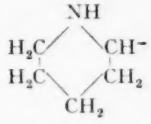
Asymmetry of Octahedral Compounds.—Optical activity among octahedral compounds requires great care in assignment of prefixes. The footnotes in *J.*, 1952, 2674, 2676, should be studied; it has been necessary in some cases to use Werner's prefixes *d*, *l*, and in others *D*, *L*.

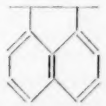
I.U.P.A.C.—Recommendations for inorganic nomenclature are in preparation by I.U.P.A.C. but have not yet been published. Until publication occurs, action on many matters of conflicting usage is deferred.

Organic

I.U.P.A.C.—In last year's Editorial Nomenclature Report the following corrections should be made:

p. 5087. The statement "$MeO{\cdot}PO_2{\cdot}O^-$ is methoxyphosphoryloxy" should be deleted (such a radical would have sexavalent phosphorus).

p. 5094. Formula of 2-piperidyl to be 

p. 5096. Formula of 1 : 6-acenaphthenylene to be 

p. 5120. $CH_2{\cdot}OH$ to replace H on $C_{(5)}$ of the right-hand ring of the second formula.

p. 5130. Phosphenimidic chloride to be $Cl{\cdot}P(O){:}NH$.

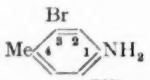
The changes called for by the I.U.P.A.C. rules reprinted in the last Report have been introduced gradually in the *Journal* during 1953; they will come into regular use in 1954.

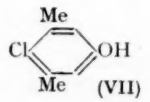
* Reprints of this Report, and of those for 1950, 1951, and 1952, may be obtained from the General Secretary, The Chemical Society, price 1s. each (post free).

Emphasis may again be laid on the change of the prefix for =O from keto to oxo in names of specific compounds, and of that for CO_2Alk from carbalkoxy to alkoxycarbonyl, etc.

Attention is also drawn to the following points:

(*i*) In methyl-substituted benzene derivatives containing functional groups the number 1


(VI)


(VII)

(VIII)

will be assigned to the functional group, and not to a methyl group as hitherto. Thus, (VI) is 3-bromo-4-methylaniline or 3-bromo-*p*-toluidine, (VII) is 4-chloro-3 : 5-dimethylphenol or 4-chloro-3 : 5 : 1-xylenol. Radicals are numbered similarly, as in *p*-tolyl (VIII), with the methyl group as 4 (*J.*, 1952, 5091, footnote 22).

(ii) Acid radicals end in "oyl," except formyl, acetyl, propionyl, butyryl, *iso*butyryl, valeryl, *iso*valeryl, oxalyl, malonyl, succinyl, glutaryl (*i.e.*, aliphatic acids up to C_5) (*J.*, 1952, 5075, rule 58.3), and the α-monoradicals aspartyl $HO_2C{\cdot}CH_2{\cdot}CH(NH_2){\cdot}CO-$ and glutamyl $HO_2C{\cdot}CH_2{\cdot}CH_2{\cdot}CH(NH_2){\cdot}CO-$ (*J.*, 1952, 5079).

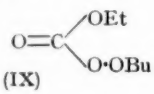
(iii) Pentyl replaces amyl (*J.*, 1952, 5073, rule 54.1).

(iv) The *iso*-nomenclature to indicate terminal branching of an aliphatic chain is permitted only up to C_6, and then only for the unsubstituted radicals (*J.*, 1952, 5073, rule 54.2).

(v) The numbering rules, though not new, are often not fully understood. They are given in I.U.P.A.C. rules 51, 64, and 66, and are discussed in the Editorial notes thereto (*J.*, 1952, 5071, 5076, 5077).

(vi) In all cases the point of attachment of radicals has the lowest possible number. For alkyl and monocyclic hydrocarbon radicals, this is invariably 1. *E.g.*, $CH_3{\cdot}CH_2{\cdot}CH_2{\cdot}CH_2{\cdot}CHMe-$ is 1-methylpentyl, not 2-hexyl.

Per-esters.—In certain mixed per-esters it became necessary to differentiate the attachment of the alkyl groups. To achieve this the ester (IX) was named *O*·*O*-butyl *O*-ethyl percarbonate (*J.*, 1953, 1809).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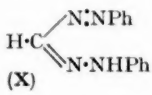
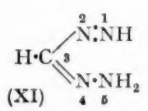
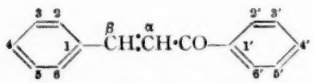

(X)


(XI)

Formazans.—The name formazyl has frequently been applied to the compound (X). This name does not lend itself to ready extension to analogues. The practice of Beilstein's "Handbuch" has therefore been adopted, of naming the parent (XI) formazan, with numbering as shown. The substance (X) (formazyl) thus becomes 1 : 5-diphenylformazan (*J.*, 1953, 3538, 3881).

Chalkones (*Phenyl Styryl Ketones*).—In the past there have been inconsistencies in choice of the ring to be distinguished by primed numerals (cf. *J.*, 1953, 2185, the styryl ring; *J.*, 1951, 569, the ring adjacent to the keto-group). Henceforth the numbering of chalkone should be as in (XII); this is consistent with *Chem. Abs.* usage (*Chem. Abs.*, 1945, **39**, 5931) and Beilstein's "Handbuch."


(XII)

Stereochemistry.—(*a*) A particular case of conflict between the amino-acid and the carbohydrate usage of D and L is provided by adrenaline and noradrenaline (*J.*, 1953, 3324), but without an agreed solution.

(*b*) Four international authorities jointly recommend replacement of polar (in the stereochemical sense) by axial (*Nature*, 1953, **172**, 1096). Use of the terms equatorial and axial will therefore be encouraged in the Society's publications; it is hoped that all authors will concur in the need for common practice.

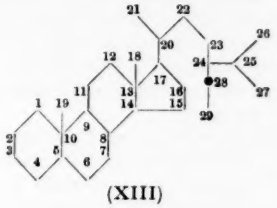
(*c*) The steroid use of α and β has been applied in the tropine field (*J.*, 1953, 721).

(*d*) Several authors prefer the use of heavy (bold) bonds to that of ordinary bonds in steroid formulæ (*e.g.*, *J.*, 1953, 2916), as is common practice in terpene chemistry. The CIBA

rule 2 (*J.*, 1951, 3527) merely prescribes that a "full line" shall be used to denote β-configuration; use of the heavy full line seems useful and will be encouraged.

(*e*) A special symbolism has been used to denote the steric relation of hydroxyl groups in a zig-zag carbohydrate chain (*J.*, 1953, 984).

Triterpenes.—Triterpene formulæ are now written so as to correspond with those of steroids (cf. *J.*, 1952, 5060). Numbering has also been changed to correspond broadly with that in the steroid series (*J.*, 1953, 1419) and is exemplified by stigmastane (XIII), eburicane (XIV; number 29 is omitted) (*J.*, 1953, 2553, 3021; contrast p. 2169), and oleanane (XV) (rings A, B, & C) (*J.*, 1953, 3025). When these examples are compared with one another and with abietane (XVI) (phenanthrene numbering) (*J.*, 1953, 3073), and the unequal treatment of methyl groups is noted, it is apparent that finality has not necessarily been reached.



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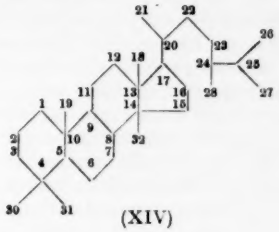
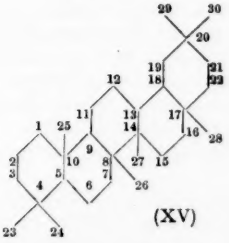


(XIV)



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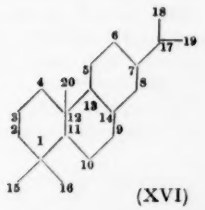


(XVI)

Relay.—When, in a long synthesis, an intermediate is prepared by complete synthesis in small quantity, and further supplies are drawn from natural sources or are derived from natural products, that intermediate may be described as a relay (*J.*, 1953, 361). The word relay should be restricted to that sense.

Isotopically Labelled Compounds.—Mention was made (*J.*, 1951, 3516; 1952, 5061) of proposals made jointly by the Editorial Board of the Biochemical Society and the Editors of the Chemical Society, and some examples were then given. These proposals received extensive test in an article in *Quarterly Reviews* (1953, 7, 407) where they were applied to 150 individual compounds; except that a slight extension was needed in one direction, no difficulties were met. We therefore reprint the nomenclature details given in that article (methods of extending the scheme to cover quantitative aspects may be obtained from the Editor):

The symbol for the isotope introduced is placed in square brackets directly attached to the front of the name, as in [^{14}C]urea.

When more than one position in a substance is labelled by means of the same isotope the number of labelled atoms is added as a right-hand subscript (cf. ordinary formulæ), as in [$^{14}C_2$]glycollic acid.

When isotopes of more than one element are introduced, their symbols are arranged in alphabetical order, including ^{2}H and ^{3}H for deuterium and tritium respectively.

The isotopic prefix precedes that part of the name to which it refers, as in 2-acetamido-7-[^{131}I]iodofluorene, α-naphth[^{3}H]oic acid ($C_{10}H_7 \cdot CO_2{}^3H$), sodium [^{14}C]formate, 1-amino[^{14}C]-methyl*cyclo*pentanol ($NH_2 \cdot {}^{14}CH_2 \cdot C_5H_8 \cdot OH$).

When not sufficiently distinguished by the foregoing means, the positions of isotopic labelling are indicated by Arabic numerals, Greek letters, or prefixes (asap propriate), placed within the square brackets and before the symbol of the element concerned, to which they are attached by a hyphen; examples are [1-^{2}H$_1$]ethanol ($CH_3 \cdot CH^2H \cdot OH$), [1-^{14}C]aniline, [α-^{14}C]-leucine, [*carboxy*-^{14}C]leucine, [*Me*-^{14}C]*iso*leucine, [6 : 7-$^{14}C_2$]xanthopterin, [αβ-$^{14}C_2$]maleic anhydride, [1-^{14}C : ^{13}2-C]acetaldehyde, [βγ-$^{13}C_2$: ^{34}S]methionine, [β-^{14}C : αβ-$^{2}H_2$: ^{15}N]serine.

When the position of isotopic labelling is indeterminate, the possible positions are specified

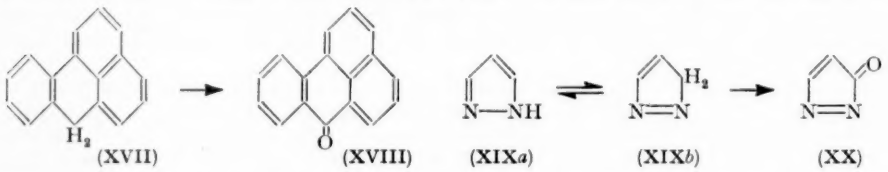
together with the number of atoms which are labelled, as in [*ar*-$^{14}C_1$]benzaldehyde (one ^{14}C in the benzene ring), [4 : 6-$^{14}C_1$]adenine (one ^{14}C, at position 4 or 6), D-[1 : 6-$^{14}C_1$]fructose (one ^{14}C, at position 1 or 6). (The device illustrated in the last two examples is an extension of the "editorial" proposals.)

Carbinol.—It was stated in the Report for 1952 (*J.*, 1952, 5061) that use of the term carbinol was very rarely justified in the light of modern nomenclature and should be restricted to *series* of compounds CRR'R''·OH. The Editors are indebted to the Manchester school for pointing out one further context in which carbinol can be usefully employed in non-specific nomenclature, namely, when it is desired to show that a particular group is directly attached to a C·OH unit. Thus, an acetylenic carbinol denotes a compound containing the grouping C≡C·C·OH, and this name differentiates it from a compound containing, *e.g.*, C≡C·C·C·OH where the C≡C and the C·OH units are separated by other atoms. In all cases, however, the names for specific compounds should normally be on orthodox lines and not on the carbinol convention.

Bis.—The prefix bis has often been used in the *Journal* in order (*a*) to obviate conjunction of two di's, as in bisdinitrophenylhydrazone or 1 : 4-bis-*p*-diphenylylpiperazine (*J.*, 1953, 1941), and (*b*) to indicate two complex groups in contradistinction from simple substitution. The second purpose needs some explanation and also some warning.

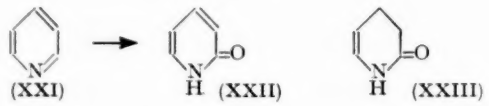
As simple illustrations, dichloroacetylbenzene is C_6H_5·CO·$CHCl_2$, but bischloroacetylbenzene is $C_6H_4(CO·CH_2Cl)_2$; dimethylaminophenanthrene is $C_{14}H_8$·NMe_2, bismethylaminophenanthrene is $C_{14}H_8(NHMe)_2$; dichloromethylamine is $CHCl_2$·NH_2 bischloromethylamine is $(CH_2Cl)_2NH$. This usage on occasions requires care: thus bismethylaminomethylphenanthrene is ambiguous as it might refer to $C_{14}H_8(CH_2·NHMe)_2$ or to $C_{14}H_9$·$CH(NHMe)_2$. Further, I.U.P.A.C. rules 49 and 50 (*J.*, 1952, 5071) do not mention bis. Indeed, rule 50 states that in cases of ambiguity parentheses may be used; and the preceding bis-compounds may be unambiguously named di(chloroacetyl)benzene, di(chloromethyl)amine, di(methylamino)methylphenanthrene, and di-(methylaminomethyl)phenanthrene. Use of bis in this sense is rare in literature other than that of Great Britain, and its limitations make its international adoption doubtful. Its use should be restricted to simple unambiguous cases; generally it may be replaced by judicious use of parentheses.

Cyclic Ketones.—Certain cyclic compounds can be, formally, converted into ketones by simple replacement of CH_2 by CO; *e.g.*, *meso*benzanthrene (XVII) ⟶ *meso*benzanthrone (XVIII); pyrazole (XIX*a*, *b*) ⟶ pyrazolone (XX). In such cases the termination of the



(XVII) (XVIII) (XIX*a*) (XIX*b*) (XX)

name may be simply changed to -one. By custom, this termination is sometimes used (particularly but not exclusively for heterocyclic ketones) when, formally, oxygen is added without replacement; *e.g.*, pyridine C_5H_5N (XXI) gives 2-pyridone, C_5H_5ON (XXII); similarly, phenanthrone is sometimes used. This leads to difficulty with reduced compounds: thus, the ketone (XXIII) is the dihydro-derivative of (XXII) and so should be named dihydro-2-pyridone: on the other hand it is the ketone formed by replacement of CH_2 by CO in tetrahydropyridine and so should be named tetrahydropyridone. Since this argument cannot be resolved, neither name should be used, but (XXIII) should be called 1 : 2 : 3 : 4-tetrahydro-2-oxopyridine.



(XXI) (XXII) (XXIII)

The termination -one should be restricted to simple unambiguous cases of formal replacement of CH_2 by CO, and to the long-established pyridone, quinolone, and *iso*quinolone in their unreduced forms.

Typographical.—The Society's printers set formulæ by use of pieces of type which can reproduce bonds vertically, horizontally, or at 45°, but not at other angles. If the more costly

blocks are to be avoided, formulæ should be drawn by using bonds only in these directions. Ingenuity is often called for; examples of "awkward" formulæ satisfactorily reproduced in type can be seen in, *e.g.*, *J.*, 1953, 3125, 3126.

Mixing of formulæ and letter press is a difficult and costly process. This can frequently be avoided by placing Tables under reaction schemes, in cases where physical data require to be attached to formulæ (see *J.*, 1953, 2984—5, 3684).

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PROCEEDINGS

OF THE

CHEMICAL SOCIETY

ANNIVERSARY MEETINGS

Thursday, March 26th–Friday, March 27th, 1953

Full details of the Anniversary Meetings to be held in London are being issued as a separate notice.

SCIENTIFIC MEETINGS DURING MARCH, 1953

LONDON.

Thursday, March 19*th*, 1953, *at* 7.30 *p.m.*

Nernst Memorial Lecture by Professor J. R. Partington, M.B.E., D.Sc.

ABERDEEN.

Thursday, March 12*th*, 1953, *at* 7.30 *p.m.*

Official Meeting and Pedler Lecture, **Discoveries among Conjugated Macrocyclic Compounds,** by Professor R. P. Linstead, C.B.E., D.Sc., F.R.S. To be held in the Chemistry Department, The University, Old Aberdeen. All members of the Society of Chemical Industry and Royal Institute of Chemistry are invited.

Thursday, March 26*th*, 1953, *at* 7.30 *p.m.*

Lecture **Some Recent Developments in the Field of Lipids,** by Dr. J. A. Lovern, F.R.I.C. Joint meeting with the Royal Institute of Chemistry and the Society of Chemical Industry, to be held in the Robert Gordon's Technical College.

BIRMINGHAM.

Monday, March 2*nd*, 1953, *at* 4.30 *p.m.*

Centenary Lecture, **Some Applications of the Separation of Large Molecules and Colloidal Particles,** by Professor A. Tiselius, Ph.D., to be given in the Chemistry Lecture Theatre of the University.

Friday, March 13*th*, 1953, *at* 4.30 *p.m.*

Lecture, **Changes occurring in the Surface of Solids during Chemical Reactions,** by Professor W. E. Garner, C.B.E., D.Sc., F.R.S. Joint meeting with the University Chemical Society to be held in the Chemistry Lecture Theatre of the University.

BRISTOL.

Thursday, March 19*th*, 1953, *at* 7 *p.m.*

Lecture, **Some New Applications of Infra-red Spectroscopy,** by Dr. H. W. Thompson, M.A., F.R.S. Joint meeting with the Royal Institute of Chemistry and the Society of Chemical Industry, to be held in the Chemistry Department of the University.

EDINBURGH.

Thursday, March 19*th*, 1953, *at* 7.30 *p.m.*

Lecture, **Radiation Chemistry,** by Professor F. S. Dainton, M.A., Ph.D. Joint meeting with the Royal Institute of Chemistry and the Society of Chemical Industry, to be held at the North British Station Hotel, Edinburgh.

GLASGOW.

Wednesday, March 4*th*, 1953, *at* 5.45 *p.m.*

Centenary Lecture, **Some Applications of the Separation of Large Molecules and Colloidal Particles,** by Professor A. Tiselius, Ph.D. To be given in the Chemistry Department of the University.

Friday, March 13*th*, 1953, *at* 6.45 *p.m.*

Ramsay Chemical Dinner to be held at the Marlborough.

IRISH REPUBLIC.

Friday, March 13*th*, 1953, *at* 7.45 *p.m.*

Lecture, **Crystal and Molecular Structure—*X*-Ray and Electron-microscope Studies,** by Professor J. M. Robertson, M.A., D.Sc., F.R.S. Joint meeting with the Werner Society to be held in the Chemistry Department, Trinity College, Dublin.

LEEDS.

Tuesday, March 3*rd*, 1953, *at* 6.30 *p.m.*

Lecture, **The Non-steady State in Chemical Kinetics,** by Professor H. W. Melville, D.Sc., F.R.S. Joint meeting with the University Chemical Society to be held in the Department of Chemistry of the University.

MANCHESTER.

Friday, March 27*th*, 1953.

One-day Symposium, **Corrosion Inhibitors**. Joint meeting with the Royal Institute of Chemistry and the Society of Chemical Industry to be held in the Chemistry Lecture Theatre of the University.

NEWCASTLE AND DURHAM.

Friday, March 13*th*, 1953, *at* 5.30 *p.m.*

Bedson Club Lecture, **Catalytic Inorganic Halides and the Friedel–Crafts Reaction,** by Dr. F. Fairbrother. To be given in the Chemistry Building, King's College, Newcastle-on-Tyne. (All Fellows are invited.)

NORTHERN IRELAND.

Friday, March 6*th*, 1953, *at* 7.45 *p.m.*

Lecture, **The Scientific Examination of Paintings,** by Dr. A. E. Werner, M.A., M.Sc., A.R.I.C. Joint meeting with The Andrews Club, the Royal Institute of Chemistry, and the Society of Chemical Industry, to be held in the Chemical Lecture Theatre, Queen's University, Belfast.

NORTH WALES.

Thursday, March 12th, 1953, at 5.45 p.m.

Lecture, **The Deoxy-sugars and their Significance as Constituents of Natural Products,** by Professor M. Stacey, D.Sc., F.R.I.C., F.R.S. Joint meeting with the Chemical Societies of the University of Liverpool and University College of North Wales, to be held in the Department of Chemistry, University College of North Wales, Bangor.

NOTTINGHAM.

Tuesday, March 3rd, 1953, at 5 p.m.

Lecture, **Molecular Vibrations and Chemical Problems,** by Dr. H. W. Thompson, M.A., F.R.S. Joint meeting with the University College Chemical Society to be held at the University College, Leicester.

ST. ANDREWS AND DUNDEE.

Monday, March 2nd, 1953, at 5.15 p.m.

Lecture, **Light Scattering,** by Dr. E. J. Bowen, M.A., F.R.S. To be given in the Chemistry Department, University College, Dundee.

Friday, March 20th, 1953, at 7 p.m.

Royal Institute of Chemistry Lecture, **The Production and Refining of Shale Oil,** by Dr. G. H. Smith, F.R.I.C. To be given in the Chemistry Department, University College, Dundee. (All Fellows are invited.)

SHEFFIELD.

Thursday, March 12th, 1953, at 7.30 p.m.

Lecture, **The Biogenesis of Plant Products,** by Sir Robert Robinson, O.M., D.Sc. LL.D., F.R.S. Joint meeting with the University Chemical Society to be held in the Chemistry Lecture Theatre of the University.

SOUTHAMPTON.

Friday, March 13th, 1953, at 5 p.m.

Lecture, **The Mechanism of Detergent Action,** by Professor N. K. Adam, M.A., Sc.D., F.R.S. Joint meeting with the University Chemical Society and the Royal Institute of Chemistry to be held in the New Chemistry Building of the University.

SOUTH WALES.

Friday, March 13th, 1953, at 5.30 p.m.

Lecture, **Acids containing Fluorine,** by Professor M. Stacey, D.Sc., F.R.I.C., F.R.S. Joint meeting with the University College Chemical Society and the Royal Institute of Chemistry, to be held in the Chemistry Department, University College, Swansea.

Monday, March 16th, 1953, at 5.30 p.m.

Lecture, **Some Recent Developments in Theoretical Organic Chemistry,** by Professor M. J. S. Dewar, M.A., D.Phil. To be given in the Chemistry Department, University College, Cardiff.

OFFICIAL ANNOUNCEMENTS

DEATHS.

The Council regrets to announce the deaths of the following Fellows :

	Elected.	Died.
Frederick Noel Ashcroft (Oxford)	June 15th, 1899.	Apr. 4th, 1949.
John Edwin Brockbank (Millom)	Feb. 16th, 1893.	Sept. 28th, 1951.
Sir Robert Waley Cohen (S.W.3)	Feb. 7th, 1901.	Nov. 28th, 1952.
Sir Charles Davis (Cambridge)	May 3rd, 1900.	Oct. 21st, 1950.
Frank Brooks Gatehouse (Hornchurch)	Dec. 3rd, 1903.	Oct. 25th, 1952.
Alexander Henry Hayes (Coulsdon) ...	Feb. 20th, 1936.	Sept. 17th, 1952.
Herbert Rivington Pyne (New Jersey)	Feb. 17th, 1921.	Mar. 24th, 1952.
Harry Gordon Reeves (E.C.1).....	Feb. 19th, 1920.	Nov. 23rd, 1952.
Charles Dodgson Walton (New York)...	Feb. 2nd, 1926.	July 25th, 1952.

CONGRATULATIONS.

The congratulations of the Council have been conveyed to James Lewis Howe of Lexington, Virginia, who completed 70 years of Fellowship on December 7th, 1952, and to David Avery of Berwick, Australia, who completed 60 years of Fellowship on December 15th, 1952.

Congratulations have also been conveyed to the following Fellows who completed 50 years of Fellowship on December 4th, 1952 :

James Justinian Drought (Kenya).
Sir Russell Grimwade (Melbourne).
John Phelps (Cheam).
Thomas Edward Wallis (N.W.7).
Lyndon Charles Wilson (Newark-on-Trent).

ACKNOWLEDGMENTS.

Acknowledgment is made of a donation of £5 from Dr. W. Davies of Melbourne, and of copies of the Society's publications from Mr. J. P. Byron and Dr. C. J. W. Hooper.

ELECTION OF NEW FELLOWS.

The following 70 Candidates were elected Fellows of the Society on December 18th, 1952 :

Rashid Ahmad.
Smiljko Asperger.
Maurice Edward Baguley.
Edward Bobko.
Sydney Brenner.
Luther Kennedy Brice.
Sheila Doreen Britton.
James Charles Brunton.
Eric Alfred Chapman.
Harry Knight Collinge.
John Stirton Davidson.
Deryk Wynn Davies.
James Francis Davies.
Martin Arnold Davis.
Pauls Davis.
Somnath Dhingra.
John Keith Fawcett.
John Ferard Flagg.
Herbert Lewis Gilbert.
Amy Marie Goodall.
Ganapathy Gopalakrishnan.
Paul Richard Hadley.
Antony John Hawthorn Hamblin.
Ronald Herbert Christopher Hampton.
John Grant Hildebrand.
Derek Leonard Hill.
Herbert Otis House.
Geoffrey Oliver Jolliffe.
Joseph P. Joseph.
Stephen Kertes.
Tsoo E. King.
Rudolph W. Kluiber.
Eleanor Joyce Lancaster-Jones.
Prosper David Lark.
Leslie Foot Larkworthy.
Liang Huang Liu.
Jaroslav Jan Machacek.
John Mackenzie.
Duncan McKie.
Orville Leonard Mageli.
David John Manners.
Milorad Matic.
Rutger Matthijsen.
William Conrad Meluch.
Lew Merzer.
Ernest Mytum.

Isadore Nicholson.
Derek Heden Penney.
Andrew George Peto.
Francis Geoffrey Read.
Frank Reeder.
Reginald Peter Reeves.
David Rittenberg.
William Robertson.
Ian Sandeman.
Michael Spiro.
Gunnar Steensholt.
Kurt H. Stern.
Francis Percy Stevens.
Herbert Aubrey Stevenson.
Roy Thomas Stiehl.
Nathan Stolow.
Geoffrey Booth Sudworth.
Martin Rowse Sutcliffe.
Yukio Tanaka.
Brian Ralph Wakeford.
Alan Williams.
John Michael Wiltshire.
Anthony Reginald Woodford.
Shigeru Yoshida.

RESEARCH FUND.

The Council has approved the following grants from the Research Fund :

	£	s.	d.
S. H. Graham, Edward Davies Chemical Laboratories, Aberystwyth. (1) "Synthetical Investigations on *bicyclo*Octanes." (2) "The Interaction between Hydroxypyrone and Acids"	10	0	0
R. S. Nyholm, N.S.W. University of Technology, Australia. "Studies in Coordination Chemistry"	20	0	0
G. Tolley, College of Technology, Birmingham. "Kinetics of Reactions between Aluminium and Acids and Alkalis"	18	15	0
J. K. N. Jones, The University, Bristol. "Synthesis of Pentose, Methylpentose, Hexose, and Heptose Sugars"	15	0	0
E. B. Maxted, The University, Bristol. "Adsorption–Desorption Equilibria of Catalyst Poisons on Platinum"	20	0	0
K. Schofield, Washington Singer Laboratories, Exeter. "Effect of Steric Factors on the Synthesis and Properties of Heterocyclic Compounds"	15	0	0
H. J. E. Loewenthal, The University, Glasgow. "Syntheses in the Colchicine and Polycyclic Fields"	10	0	0
R. I. Reed, The University, Glasgow. "Isotopic Tracer Studies of Pyrolytic Reactions"	30	0	0
G. S. Saharia, University of Delhi, India. "The Chemistry of *cyclo*Octanediols and their Derivatives"	10	0	0
S. L. Martin, University College of the West Indies, Jamaica. "Absorption of Hydrogen by Titanium	50	0	0
A. T. Austin, The University, Leeds. "Nitrous Acid Deamination of Cystine"	10	0	0
K. Bowden, The University, Leeds. "Biogenesis of Alkaloids"	18	0	0
P. A. Briscoe, The University, Leeds. "Isomerisation of Sulphilimines"	10	0	0
N. Smith, College of Technology, Liverpool. "Study of 'Acid Salts' of Monobasic Acids"	28	0	0
S. Verne, Acton Technical College, London. "Dielectric Polarisation of Solutions"	17	10	0
A. G. Davies, Battersea Polytechnic, London. "Chemistry of Organic Peroxides"	14	0	0
J. T. Mills, Borough Polytechnic, London. "Catalytic Decomposition of Monocarboxylic Acids"	20	0	0
P. R. Rowland, Guy's Hospital Medical School, London. "Mechanism of Electropolishing"	32	0	0
J. O'M. Bockris, Imperial College of Science, London. "Kinetics and Mechanism of Evolution of Oxygen on Platinum, etc."	12	10	0
L. Crombie, Imperial College of Science, London. "Vegetable Amides"	20	0	0
J. Honeyman, King's College, London. "Sugar Nitrates"	20	0	0
P. F. G. Praill, King's College of Household and Social Science, London. "Reactions of some Organic Cations"	16	10	0
W. Gerrard, Northern Polytechnic, London. "Reactions in Phosphorus Tribromide—and Phosphoryl Bromide—Hydroxy-compound Systems"	10	0	0
M. F. Ansell, Queen Mary College, London. "Use of Acetylenic Dienophiles in the Synthesis of Reduced Polycyclic Systems"	5	0	0
B. H. Claussen, Queen Mary College, London. "An Investigation of E.M.F.s in Aqueous Alcoholic Systems"	10	0	0
D. Feakins, Queen Mary College, London. "Standard Potentials in Ketone–Water and other Aqueous–Organic Solvent Mixtures"	10	0	0
K. H. Glover, Queen Mary College, London. "Measurement of the Electrical Conductances of Non-aqueous Solutions of High Dielectric Constant"	30	0	0
Miss D. M. Grove, Queen Mary College, London. "Thermo-osmosis of Gases through a Porous Membrane"	11	0	0

	£	s.	d.
D. Harrison, Queen Mary College, London. "Magnetochemical Investigation of some Tautomeric Systems"	10	0	0
D. C. Jones, Queen Mary College, London. "Determination of Interfacial Tensions and their Temperature Coefficients of Nitro-bodies against Water and Saturated Hydrocarbons"	15	0	0
N. Singer, Queen Mary College, London. "Conductance of Solutions having Large Solvent Molecules"	15	0	0
F. Kurzer, Royal Free Hospital School of Medicine, London. "Sulphur-containing Derivatives of Urea and Related Compounds"	15	0	0
L. H. Briggs, Auckland University, New Zealand. "Plant Products of New Zealand"	30	0	0
A. H. Lamberton, The University, Sheffield. "Preparation and Properties of Optically-active *sec.*-Butylnitramine"	10	0	0
D. R. Tucker, College of Further Education, Slough. "Kinetics of Reactions in Strong Acid Media"	30	0	0
G. W. A. Fowles, The University, Southampton. "Nitrogen Complexes of Transition Metal Halides"	10	0	0
P. H. Plesch, University College of North Staffs, Stoke-on-Trent. "Investigations of Cationic Polymerisations"	15	0	0

CORDAY-MORGAN MEDAL AND PRIZE.

The Corday–Morgan Medal and Prize, consisting of a Silver Medal and a monetary Prize of 150 Guineas, is awarded annually to the chemist of either sex and of British Nationality, who, in the judgment of the Council of the Chemical Society, shall have published during the year in question the most meritorious contribution to experimental chemistry, and who shall not, at the date of publication, have attained the age of thirty-six years. The Council has power to suspend the award in any year in which no suitable candidate presents himself or is brought to the notice of the Council.

Copies of the rules governing the Award may be obtained from the General Secretary of the Society. Applications or recommendations in respect of the Award for the year 1952 must be received not later than December 31st, 1953, and applications for the Award for 1953 are due before the end of 1954.

HARRISON MEMORIAL PRIZE.

In accordance with the Trust Deed governing the Harrison Memorial Fund, the Selection Committee, consisting of the Presidents of the Chemical Society, the Royal Institute of Chemistry, the Society of Chemical Industry, and the Pharmaceutical Society, will make an award of the Harrison Memorial Prize in December 1953, subject to the condition that the Selection Committee shall be of opinion that there is a candidate of sufficient distinction to warrant an award of the Prize.

The Prize, not exceeding 100 Guineas, will be awarded to the chemist of either sex, being a natural-born British subject and not at the time over thirty years of age, who, in the opinion of the Selection Committee, shall, during the previous five years, have conducted the most meritorious and promising original investigations in Chemistry and published the results of those investigations in a scientific periodical or periodicals.

Applications, five copies of which must be submitted, should give the name of the applicant (in full); age (birth certificate should accompany the application); degrees (with name of University); any other qualifications and experience; titles of published papers (with co-authors names) including full references to publication; where research was carried out; testimonials and references. and any other particulars bearing on the application.

The Selection Committee is prepared to consider applications, nominations, or information as to candidates eligible for the Prize. Any such communication must be received by the President, The Chemical Society, Burlington House, Piccadilly, London, W.1, not later than Tuesday, December 1st, 1953. Candidates must not have attained the age of thirty years at this date.

THE ROYAL PHOTOGRAPHIC SOCIETY—INTERNATIONAL CONFERENCE ON THE SCIENCE AND APPLICATIONS OF PHOTOGRAPHY.

The Royal Photographic Society of Great Britain celebrates its Centenary in 1953 and will hold an International Conference, on the Science and Applications of Photography, in London from Saturday, September 19th, 1953, to Friday, September 25th, 1953.

The Conference will cover many aspects of the science, technique and applications of photography and will be divided into sections dealing with :

I. Photographic Science (including theory of latent image and development, sensitization, sensitometry, resolving power, granularity, properties of photographic materials).

II. Cinematography and Colour Photography.

III. Technique and Applications of Photography (including industrial radiography, photomicrography, spectroscopy, aerial photography, photogrammetry, high-speed photography, nuclear track recording, and other physical, chemical, and biological applications ; photocopying ; apparatus, processes, manipulations).

IV. Photomechanical Processes.

V. History, Literature (including abstracting and documentation) and Training in Photography.

All persons taking an interest in photography or its applications are cordially invited to attend the Conference, and to submit papers for discussion. Titles and indications of the scope of such papers should be submitted before February 1st, 1953. Further details will be sent on application to the Honorary Secretary, R.P.S. Centenary Conference, 16, Princes Gate, London, S.W.7.

MINUTES OF SCIENTIFIC MEETINGS

Minutes of a

SCIENTIFIC MEETING

held at Burlington House on December 4th, 1952, at 7.30 p.m.

Professor H. Burton, Ph.D., D.Sc., F.R.I.C., Honorary Secretary, was in the Chair.

MINUTES.

The Minutes of the Scientific Meeting held at Burlington House on November 20th, 1952, were read, and were confirmed and signed.

SCIENTIFIC COMMUNICATIONS.

The following papers were read and discussed :

" The Type II pneumococcus specific polysaccharide," by K. Butler and M. Stacey.

" Influence of temperature on the specific rotations of some methylated D-fructoses," by D. J. Bell.

" Alicyclic glycols. Parts VIII—XI. ' Stereoisomers of the bishydroxymethyl*cyclo*hexanes, dimethyl*cyclo*hexanes, and methyl*cyclo*hexylmethanols,' " by G. A. Haggis and L. N. Owen.

Minutes of a

SCIENTIFIC MEETING

held at Burlington House on December 18th, 1952, at 7.30 p.m.

The President, Professor C. K. Ingold, D.Sc., F.R.S., was in the Chair.

MINUTES.

The Minutes of the Scientific Meeting held at Burlington House on December 4th, 1952, were read, and were confirmed and signed.

FORMAL ADMISSION OF FELLOWS.

The following were admitted Fellows of the Society : L. E. Orgel, Dorothy C. Hodgkin, G. I. Gregory, G. R. Hall.

SCIENTIFIC COMMUNICATIONS.

The following papers were read and discussed :

" Possible *f*-covalency in uranium," by C. A. Coulson and G. R. Lester.

" The effects of crystal fields on the properties of transition-metal ion," by L. E. Orgel.

" Many-centre bonds in some electron-deficient molecules," by H. C. Longuet-Higgins.

MEETINGS OUTSIDE LONDON

LEEDS.

" Chemistry of the Tropolones," by Professor R. D. Haworth, D.Sc., F.R.S.

A meeting of the Society was held on November 25th in the Department of Chemistry of the University, with Professor F. Challenger in the Chair.

The Lecturer gave a most lucid account of tropolone chemistry, based mainly on experience with β-methyltropolone obtained from purpurogallin. (See also *Proceedings*, 1952, 51.)

Following a lively discussion, Dr. J. W. Baker proposed a vote of thanks to the Lecturer, which was accorded with acclamation.

SHEFFIELD.

" The Origin of Meteorites," by Professor F. A. Paneth, F.R.S.

A joint meeting with the Royal Institute of Chemistry was held in the Chemistry Lecture Theatre on November 27th, with Professor R. D. Haworth, F.R.S., in the Chair.

Professor Paneth gave a most interesting account, mainly from the historical standpoint, of the phenomenon of the existence of meteorites, and then proceeded to deal with the chemical evidence of their age. It seems probable that meteorites are members of the solar system (*i.e.*, fragments of a disrupted minor planet), and that their age (since solidification) is only of the order of 100 million years. Their helium content indicates, at first sight, a much greater age ; but a remarkably large proportion (20—30 per cent.) of this is ^{3}He. All the ^{3}He, and a proportion of the ^{4}He, have been formed by the action of cosmic rays on the iron ; only a small proportion of the total helium is the product of radioactive disintegration.

On the motion of Dr. D. H. Peacock, a cordial vote of thanks was given to the Lecturer.

SOUTHAMPTON.

" The Transfer of Hydrogen between Organic Compounds," by Professor R. P. Linstead, D.Sc., F.R.S.

A joint meeting with the Portsmouth and District Chemical Society was held at the Portsmouth Municipal College New Building, Anglesea Road, on December 5th, with Mr. A. L. Williams in the Chair.

Professor Linstead described various types of hydrogen transfer reaction and illustrated the practical and theoretical importance of such donor–acceptor systems by well-chosen examples from this recently developed field. The lecture was accompanied by slides.

After the discussion, a vote of thanks to Professor Linstead was proposed by Mr. J. M. Wilson, and enthusiastically accorded.

" The Nature of the Co-ordinate Link," by Dr. J. Chatt.

A joint meeting with the Mid-Southern Counties Section of The Royal Institute of Chemistry and the University of Southampton Chemical Society was held in the Chemistry Department of the University on November 21st, with Dr. A. C. Riddiford in the Chair.

Dr. Chatt discussed the formation of various types of complex from the point of view of the orbital hybridisation required in the process, and went on to indicate some factors which influence the nature and stability of linkages in complex molecules or ions. The lecture was illustrated by slides and charts.

After the discussion, a vote of thanks to Dr. Chatt was proposed by Mr. E. Cartmell and vigorously accorded by the large audience.

LIST OF APPLICATIONS FOR FELLOWSHIP

(*Fellows wishing to lodge objections to the election of these candidates should communicate with the Honorary Secretaries within ten days of the date of publication of the* Journal *for January, 1953. Such objections will be treated as confidential. The forms of application are available in the Library.*)

***Abele, Derek Norman,** A.R.I.C. British. 21, Charlotte Street, Brighton 7, Sussex. National Service. *Signed by:* N. H. P. Pratt, A. E. Owen, G. E. Watts.

***Adams, David Michael.** British. 47, Hevers Avenue, Horley, Surrey. Student at King's College, London. *Signed by:* S. H. Harper, E. K. Rideal, G. H. Williams.

***Allan, Richard James Paul,** B.Sc. (Glas.). British. 7, Westbourne Drive, Bearsden, Dumbartonshire. Research Student at Royal Technical College, Glasgow. *Signed by:* H. G. A. Anderson, H. L. Howard, J. McLean.

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PAPERS RECEIVED

(List of papers received between November 21st and December 19th, 1952.)

"Coenzyme A. Part VIII. Pantetheine-2'- and -2' : 4'-phosphates and a new method for the synthesis of cyclic phosphates." By J. Baddiley and E. M. Thain.

"The infra-red spectra of quaternary methiodides of *NN*-disubstituted thioamides." By J. D. S. Goulden.

"Steroids. Part VIII. 22 : 23-Dibromo-9ξ : 11α-dihydroxyergostan-3β-yl acetate and related compounds." By Richard Budziarek and F. S. Spring.

"The kinetics of isotope exchange reactions." By A. G. MacDiarmid.

"3-Phenyl*iso*oxazol-5-one." By C. L. Angyal and R. J. W. Le Fèvre.

"The chloromethylation of eugenol and the preparation of some new *iso*quinoline bases." By G. R. Clemo and R. W. Temple.

"Halogenation in the liquid phase by chlorine trifluoride. The reaction with benzene derivatives and with carbon tetrachloride." By J. F. Ellis and W. K. R. Musgrave.

"Acylation and allied reactions catalysed by strong acids. Part X. The alleged activity of silver perchlorate as a Friedel–Crafts catalyst." By H. Burton and P. F. C. Praill.

"Acylation and allied reactions catalysed by strong acids. Part XI. The dismutation of diphenylmethanol by perchloric acid." By H. Burton and G. W. H. Cheeseman.

"A short survey of the oxidation of normal paraffins from propane to nonane by nitrous oxide." By E. J. Smith.

"Methanesulphonic acid–sulphur trioxide complex : Detection by Raman spectroscopy." By I. Sandeman.

"The thermochemistry of organo-arsenic compounds. Part II. Esters of arsenous acid." By T. Charnley, C. T. Mortimer, and H. A. Skinner.

"The effect of solvents on the tautomeric equilibria of 4-arylazo-1-naphthols and the *ortho*-effect." By A. Burawoy and A. R. Thompson.

"*o*-Mercaptoazo-compounds. Part III. Action of thiocyanic acid on diazotised *o*-nitroarylamines." By A. Burawoy and C. Turner.

"The preparation and properties of 1-phenyl-1-phospha-2 : 3-6 : 7-dibenzo*cyclo*hepta-2 : 6-diene and its arsenic analogue." By Frederick G. Mann, Ian T. Miller, and Bryan B. Smith.

"Tuberculostatic hydrazides and their derivatives." By Ng. Ph. Buu-Hoï, Ng. D. Xuong, Ng. H. Nam, Fernand Binon, and Rene Royer.

"Epimeric alcohols of the *cyclo*hexane series. Part IX. (±)-*cis*-3-Methyl*cyclo*hexylcarbinol and (±)-*cis*-3-methyl*cyclo*hexylcarboxylic acid." By L. H. Darling, A. Killen Macbeth, and J. A. Mills.

" The chemotherapy of tuberculosis. Part V. Lipoid partition coefficients of some aromatic bases." By J. CYMERMAN-CRAIG and A. A. DIAMANTIS.

" A new synthesis of 2 : 5-dihydroxyphenyl-DL-alanine adapted to isotopic scale." By ALEXANDER T. SHULGIN and EMERY M. GAL.

" Potential carcinogens. Part II. D-Homosteroids." By N. GOUGH and C. W. SHOPPEE.

" 2 : 2′ : 4 : 4′-Tetranitrodiphenyl sulphoxide and 2 : 2′ : 4 : 4′-tetranitrodiphenyl sulphone." By HELENA BRADBURY, F. J. SMITH, and F. A. TALMAN.

" Aminophenoxazines as possible antitubercular agents. Part I. A new method for the synthesis of 3-aminophenoxazine." By B. BOOTHROYD and EDWARD R. CLARK.

" Aminophenoxazines as possible antitubercular agents. Part II." By B. BOOTHROYD and EDWARD R. CLARK.

" 1-Acetamidophenazine, 5 : 8 : 13 : 14-tetra-azapentaphene, and 5 : 6 : 8 : 13 : 14-penta-azapentaphene." By GERALD H. COOKSON.

" The electrolytic conductance of solutions of phosphorus pentachloride." By D. S. PAYNE.

" The decomposition of decalin hydroperoxide. A kinetic study." By C. F. H. TIPPER.

" Determination of small quantities of *m*-dinitrobenzene in nitrobenzene." By F. G. ANGELL.

" A new synthesis of arsonic acids. Part V. Coupling of cinnamic acid with diazotised *m*-arsanilic acid yielding 3-arsonostilbene." By WALTER FREUND and ALFRED KOMZAK.

" The synthesis of 6 : 7 : 8 : 9-tetrahydro-2-methyl-β-carboline." By G. R. CLEMO and R. J. W. HOLT.

" Determinations of electrokinetic charge and potential by the sedimentation method. Part IV. Silica in conductivity water." By D. P. BENTON and G. A. H. ELTON.

" The electronic structures and spectra of some molecules related to oxygen." By L. E. ORGEL.

" αβ-Unsaturated adehydes and related compounds. Part III. The addition of alcohols to the dimers of acraldehyde and α-methylacraldehyde." By R. H. HALL.

" The liquid dinitrogen tetroxide solvent system. Part XIII. Factors related to the mechanism of metal–dinitrogen tetroxide reactions; the dipolar nature of dinitrogen tetroxide in the liquid state." By C. C. ADDISON and J. LEWIS.

" The liquid dinitrogen tetroxide solvent system. Part XIV. Reactions of sodium, calcium, and zinc oxides with dinitrogen tetroxide and its thermal dissociation products." By C. C. ADDISON and J. LEWIS.

" Reactions of sodium carbonate and sodium hydroxide with dinitrogen tetroxide." By C. C. ADDISON and J. LEWIS.

" The dipole moments of furan and thiophen measured in the dissolved or gaseous states." By B. HARRIS, R. J. W. LE FÈVRE, and E. P. A. SULLIVAN.

" The dipole moment of pyrrole measured in the dissolved and gaseous states." By A. D. BUCKINGHAM, B. HARRIS, and R. J. W. LE FÈVRE.

" The preparation of *N*-4-diphenylylethyleneimine." By J. N. BAXTER and J. CYMERMAN-CRAIG.

" The skeleton of *iso*rubijervine." By DEREK BURN and W. RIGBY.

" Studies in the detoxication of catalyst poisons. Part IX. Dimethylphenylphosphine." By E. B. MAXTED and G. T. BALL.

" The structure of native poly-D-glutamic acid. Part IV. The synthesis and Hofmann degradation of poly-L-glutamine." By V. BRUCKNER, J. KOVÁCS, and K. KOVÁCS.

" The vapour pressure and lattice energy of hydrogen-bonded crystals. Part I. Oxamide, oxamic acid, and rubeanic acid." By R. S. BRADLEY and T. G. CLEASBY.

" The vapour pressure and lattice energy of hydrogen-bonded crystals. Part II. α and β anhydrous oxalic acid and tetragonal pentaerythritol." By R. S. BRADLEY and S. COTSON.

" The vapour pressure and lattice energy of hydrogen-bonded crystals. Part III. Thiophene-, furan-, and pyrrole-2-carboxylic acid." By R. S. BRADLEY and A. D. CARE.

" The vapour pressure and lattice energy of some aromatic ring compounds." By R. S. BRADLEY and T. G. CLEASBY.

" The synthesis of 5 : 6-dihydroxythionaphthene." By D. G. BEW and G. R. CLEMO.

" *cyclo*Octatetraene derivatives. Part I. Dimerisation of *cyclo*octatetraene." By WILLIAM O. JONES.

" *cyclo*Octatetraene derivatives. Part II. Condensation of *cyclo*octatetraene and phenol." By WILLIAM O. JONES.

" Heterocyclic derivatives of 1 : 2-5 : 6-dibenzo*cyclo*hepta-1 : 3 : 5-triene. Part I. 2 : 3-6 : 7-dibenz-1-oxa-4-aza*cyclo*hepta-2 : 4 : 6-trienes." By C. I. BRODRICK, (MISS) M. L. DONALDSON, J. S. NICHOLSON, W. F. SHORT, and D. G. WIBBERLEY.

" ω-Halogenomethyl-pyridines, -quinolines, and -*iso*quinolines. Part IV. The mechanism of halogenation of quinaldines." By B. R. BROWN, D. LL. HAMMICK, B. H. THEWLIS, and D. J. WALBRIDGE.

" A small laboratory liquid-liquid extraction apparatus." By J. F. SHORT.

" Mannose-containing polysaccharides. Part III. The polysaccharides in the seeds of *Iris ochroleuca* and *I. sibirica*." By P. ANDREWS, L. HOUGH, and J. K. N. JONES.

" Perfluoroalkyl Grignard reagents. Part II. Reaction of heptafluoro-*n*-propylmagnesium iodide with carbonyl compounds, and the mechanism of reduction during Grignard reactions." By R. N. HASZELDINE.

" Perfluoroalkyl Grignard reagents. Part III. The ionisation constants and infra-red spectra of some primary and secondary halogen-containing alcohols." By R. N. HASZELDINE.

" Chemistry of indanthrone. Part VIII. 3 : 3'-Dimethyl derivatives of indanthrone and flavanthrone." By WILLIAM BRADLEY and HARRY E. NURSTEN.

" Elimination reactions of esters. Part I. The formation of αβ-unsaturated acids from β-acyloxy-compounds." By R. P. LINSTEAD, L. N. OWEN, and R. F. WEBB.

" Elimination reactions of esters. Part II. The formation of α-keto-acids from derivatives of αβ-dihydroxy-acids, and related reactions." By R. P. LINSTEAD, L. N. OWEN, and R. F. WEBB.

" Elimination reactions of esters. Part III. Derivatives of polyhydroxy-dibasic acids." By R. P. LINSTEAD, L. N. OWEN, and R. F. WEBB.

" Polyene acids. Part VI. A new (*cis-trans*-) isomer of sorbic acid and its relation to hexenolactones." By ULLI EISNER, J. A. ELVIDGE, and R. P. LINSTEAD.

" Interfaces between some aqueous fatty sols and water." By L. SAUNDERS.

" The oxidation of hydrazine in aqueous solution. Part I. The nature of 1- and 2-electron-transfer reactions with particular reference to the oxidation of hydrazine." By W. C. E. HIGGINSON, D. SUTTON, and P. WRIGHT.

" The oxidation of hydrazine in aqueous solution. Part II. The use of ^{15}N as a tracer in the oxidation of hydrazine." By W. C. E. HIGGINSON and D. SUTTON.

" The chemistry of extractives from hardwoods. Part XI. The isolation of a diterpene ester (methyl vinhaticoate) and of 6 : 7 : 3' : 4'-tetrahydroxyflavanone (plathymenin) and 2 : 4 : 5 : 3' : 4'-pentahydroxychalkone (*neo*plathymenin) from *plathymenia reticulata*." By F. E. KING, T. J. KING, and K. G. NEILL.

" The chemistry of extractives from hardwoods. Part XII. The cyclitols and steroids of Opepe (*Sarcocephalus diderrichii*)." By F. E. KING and L. JURD.

" Studies in the polyene series. Part XLV. The synthesis of *o*-tolyl and mesityl analogues of vitamin-A acid." By K. R. BHARUCHA and B. C. L. WEEDON.

" Studies in the polyene series. Part XLVI. The synthesis of two pentaene esters related to vitamin A." By K. R. BHARUCHA and B. C. L. WEEDON.

" Studies in the polyene series. Part XLVII. The preparation and rearrangement of some dialkenylcarbinols." By K. R. BHARUCHA and B. C. L. WEEDON.

" Synthesis of 1-alkyl-1 : 2 : 3 : 4-tetrahydro-2-3'-indolylmethyl-6 : 7-dimethoxy*iso*-quinolines and the ready cleavage of their methiodides." By J. M. OSBOND.

" The synthesis and resolution of (±)-corlumine." By W. M. WHALEY and M. MEADOW.

" The hydrothermal chemistry of silicates. Part II. Reactions of analcite and leucite." By R. M. BARRER, L. HINDS, and E. A. WHITE.
" Thermal mutarotation of some methylated D-fructoses." By D. J. BELL.
" Quinones. Part I. Chloroalkylation." By R. H. THOMSON.
" Quinones. Part II. The addition of mercapto-acids to benzoquinones and 1 : 4-naphthaquinone." By A. BLACKHALL and R. H. THOMSON.
" Correlation of vapour pressure, temperature, and molar entropy of vaporisation." By LEO H. THOMAS.
" The addition of free radicals to unsaturated systems. Part III. Chlorotrifluoroethylene." By R. N. HASZELDINE and B. R. STEELE.
" The reaction of diazonium salts with β-2-thienylacrylic acid." By WALTER FREUND.

ADDITIONS TO THE LIBRARY

I. *Donations*

A. *Books.*

ACADEMIA SCIENTIARUM HUNGARICA. Acta Chimica. Vol. 1, etc. Budapest 1951 +. (*Reference.*)

—— Acta Physiologica. Vol. 3, etc. Budapest 1952 +. (*Reference.*)

AGROKÉMIAI KUTATÓ INTÉZET. Agrokémia és Talajtan. Vol. 1, etc. Budapest 1951 +. [In Hungarian with Russian and European language summaries.] (*Reference.*)

DISTILLATION PRODUCTS INDUSTRIES. Annotated bibliography of vitamin E. Vol. 2, 1950 and 1951. Compiled by PHILIP L. HARRIS and WILMA KUJAWSKI. Rochester, N.Y. 1952. pp. [iv] + 106. (*Reference.*) The Company. $2.

From the Director of Research.

ORGANISATION FOR EUROPEAN ECONOMIC CO-OPERATION. Fertilisers. Methods of analysis used in O.E.E.C. countries. (O.E.E.C. Documentation.) From the Director.

PRAKTISCHE CHEMIE. Heft 11, 1951, etc. Wien 1951 +. (*Reference.*)

From the Bureau of Abstracts.

B. *Pamphlets.*

INSTITUT FÜR RAUMFORSCHUNG [and others]. Die chemische Industrie in der sowjetischen Besatzungszone. Bonn 1952. pp. 80. (Bonner Berichte aus Mittel- und Ostdeutschland.) From Mr. Agard Evans.

U.S. *Department of Agriculture. Agricultural Research Administration. Bureau of Agricultural and Industrial Chemistry.* Dextran; a selected bibliography. Chemical, microbiological, clinical, and related publications of interest in the use of dextran as a synthetic blood volume expander. By ALLENE JEANES [and others]. Peoria, Ill. 1952. pp. 42.

From the Northern Research Laboratory.

II. *By Purchase.*

BACH, S. J. The metabolism of protein constituents in the mammalian body. Oxford 1952. pp. viii + 272. ill. Clarendon Pr. 40*s*. (*Recd.* 2/12/52.)

BARTON-WRIGHT, EUSTACE CECIL. The microbiological assay of the vitamin B-complex and amino acids. London 1952. pp. x + 179. ill. Pitman. 18*s*. (*Recd.* 2/12/52.)

BOWDEN, FRANK PHILIP, and YOFFE, ABRAHAM DAVID. Initiation and growth of explosion in liquids and solids. Cambridge 1952. pp. xii + 104. ill. Cambridge Univ. Pr. 22*s*. 6*d*. (*Recd.* 11/12/52.)

BROOKHAVEN NATIONAL LABORATORY. *Biology Department.* The chemistry and physiology of the nucleus. Proceedings of the symposium held August, 1951. Edited by V. T. BOWEN [and others]. New York 1952. pp. xv + 402. ill. (*Exp. Cell Research*, 1952, Supplement No. 2.) Academic Pr. $7. (*Recd.* 2/12/52.)

CHEMICAL MANUFACTURERS' DIRECTORY of England, Wales, and Scotland, with some of the firms in Ireland, for 1952. 84th edition. London 1952. pp. 193. (*Reference.*) Simpkin Marshall. 8*s*.

CLAR, ERIC. Aromatische Kohlenwasserstoffe, polycyclische Systeme. 2nd edition. Berlin 1952. pp. xxii + 481. ill. (Organische Chemie in Einzeldarstellungen, 2.) Springer. *DM* 69. (*Recd.* 13/12/52.)

COMMONWEALTH BUREAU OF HORTICULTURE AND PLANTATION CROPS. Technical Communication No. 22. Sand and water culture methods used in the study of plant nutrition. By E. J. HEWITT. Farnham Royal, Bucks. 1952. pp. x + 241. ill. Commonwealth Agricultural Bureaux. 42*s*. (*Recd.* 2/12/52.)

CURME, GEORGE OLIVER, JR., and JOHNSTON, FRANKLIN. *Editors.* Glycols. New

York 1952. pp. xii + 389. ill. (American Chemical Society Monograph Series.) Reinhold. $12. (*Recd.* 27/11/52.)

DANA, JAMES D. Manual of mineralogy. 16th edition. Revised by CORNELIUS S. HURLBUT, JR. New York 1952. pp. viii + 530. ill. Wiley. $6. (*Recd.* 2/12/52.)

DEUTSCHE MINERALOGISCHE GESELLSCHAFT. *Sektion für Kristallkunde.* Zur Struktur und Materie der Festkörper. Diskussionstagung. . . . Mai, 1951. Berlin 1952. pp. vii + 304. ill. Springer. *DM* 28.60. (*Recd.* 13/12/52.)

FIERZ-DAVID, HANS EDUARD, and BLANGEY, LOUIS. Grundlegende Operationen der Farbenchemie. 8th edition. Wien 1952. pp. xxiv + 416 + 24 tables. Springer. £5 8*s*. (*Recd.* 13/12/52.)

GREEN, HERBERT S. The molecular theory of fluids. Amsterdam 1952. pp. viii + 264. ill. (Deformation and Flow Monographs.) North-Holland Publ. Co. 20 *Guilders*. (*Recd.* 28/11/52.)

HOUBEN, JOSEF, and WEYL, THEODOR. Methoden der organischen Chemie. 4th edition. Edited by EUGEN MULLER. Vol. 8. Sauerstoffverbindungen, 3. By R. CRIEGEE [and others]. Stuttgart 1952. pp. xviii + 775. ill. (*Reference.*) Georg Thieme. *DM*. 98.

HURD, DALLAS T. An introduction to the chemistry of the hydrides. New York 1952. pp. x + 231. Wiley. $5.50. (*Recd.* 2/12/52.)

INSTITUTE OF BIOLOGY, and ATOMIC SCIENTISTS' ASSOCIATION. Biological hazards of atomic energy. Being papers read at the conference. . . . October, 1950. Edited by ALEXANDER HADDOW. Oxford 1952. pp. xi + 235. ill. Oxford Univ. Pr. 35*s*. (*Recd.* 19/12/52.)

INSTITUTE OF PETROLEUM. *Mass Spectrometry Panel.* Mass spectrometry. Report of a conference held . . . April, 1950. London 1952. pp. vi + 205. ill. The Institute. 30*s*. (*Recd.* 2/12/52.)

KOLLER, LEWIS R. Ultra-violet radiation. New York 1952. pp. ix + 270. ill. Wiley. $6.50. (*Recd.* 2/12/52.)

LAUER, BYRON ELMER, and HECKMAN, RUSSELL F. Chemical engineering techniques. New York 1952. pp. iv + 496. ill. Reinhold. $6. (*Recd.* 27/11/52.)

MARTELL, ARTHUR EARL, and CALVIN, MELVIN. Chemistry of the metal chelate compounds. New York 1952. pp. xii + 613. ill. Prentice-Hall. $13.50. (*Recd.* 27/11/52.)

MARTINDALE, WILLIAM HARRISON. The extra pharmacopœia. 23rd edition. Vol. 1. Published by the direction of the Council of the Pharmaceutical Society of Great Britain. London 1952. pp. xxii + 1352. (*Reference.*) Pharmaceutical Pr. 55*s*.

MINISTRY OF SUPPLY. Selected Government Research Reports, Vol. 1. Plastics. London 1952. pp. [iv] + 442. ill. H.M.S.O. 35*s*. (*Recd.* 11/12/52.)

—— *Atomic Energy Research Establishment.* Symposium on the handling of radioactive isotopes, held September, 1951. Edited by G. R. HALL. Harwell 1952. pp. 37 + 31 figures. (*Reference.*) H.M.S.O. 12*s*. 6*d*.

MOSS, TREVOR SIMPSON. Photoconductivity in the elements. London 1952. pp. x + 263. ill. Butterworth. 50*s*. (*Recd.* 2/12/52.)

PFLÜCKE, MAXIMILIAN, and HAWELEK, ALICE. *Editors.* Periodica Chimica. 2nd edition. Berlin 1952. pp. x + 411. (*Reference.*) Akademie-Verlag. 61*s*. 3*d*.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN. Antibiotics: a survey of their properties and uses. [2nd edition.] London 1952. pp. xii + 290. ill. Pharmaceutical Pr. 25*s*. (*Recd.* 2/12/52.)

RICCI, JOHN ETTORE. The phase rule and heterogeneous equilibrium. New York 1951. pp. xi + 505. ill. Van Nostrand. $12. (*Recd.* 11/12/52.)

THINIUS, KURT. Analytische Chemie der Plaste (Kunststoff-Analyse). Berlin 1952. pp. viii + 480. ill. (Chemie und Technologie der Kunststoffe in Einzeldarstellungen, 3.) Springer. *DM*. 58.50. (*Recd.* 13/12/52.)

THRING, M. W. The science of flames and furnaces. London 1952. pp. xiv + 416. ill. Chapman & Hall. 42*s*. (*Recd.* 2/12/52.)

U.S. *Interdepartmental Committee on Air Pollution.* Air pollution. Proceedings of the United States conference. . . . New York 1952. pp. xiv + 847. ill. McGraw-Hill. $12.50. (*Recd.* 2/12/52.)

—— NATIONAL ACADEMY OF SCIENCES. *National Research Council.* Symposium on radiobiology; the basic aspects of radiation effects on living systems. [Held]. . . . 1950. Edited by JAMES J. NICKSON. New York 1952. pp. xii + 465. ill. Wiley. $7.50. (*Recd.* 2/12/52.)

VAIL, JAMES GARRETT [and others]. Soluble silicates; their properties and uses. Vol. 1. Chemistry. New York 1952. pp. xii + 357. ill. (American Chemical Society Monograph Series.) Reinhold. 72*s*. (*Recd.* 2/12/52.)

WAGGAMAN, WILLIAM H. Phosphoric acid, phosphates and phosphatic fertilizers. 2nd edition. New York 1952. pp. vii + 683. ill. (American Chemical Society Monograph Series.) Reinhold. $15. (*Recd.* 27/11/52.)

ZIMEN, K. E. Angewandte Radioaktivität Berlin 1952. pp. viii + 125. ill. Springer. *DM*. 18.80. (*Recd.* 13/12/52.)

PROCEEDINGS
OF THE
CHEMICAL SOCIETY

SCIENTIFIC MEETINGS DURING APRIL, 1953

LONDON.

Thursday, April 30th, 1953, at 7.30 p.m.

Lecture, **The Scientific Problems of Surface Catalysis,** by Professor H. S. Taylor, D.Sc., LL.D., F.R.S.

IRISH REPUBLIC.

Wednesday, April 15th, 1953, at 7.45 p.m.

Lecture, **The Influence of Chemistry on Medical Practice,** by Professor E. C. Dodds, F.R.S. Joint meeting with the Royal Institute of Chemistry, the Society of Chemical Industry, and the Institute of Chemistry of Ireland, to be held at University College, Upper Merrion Street, Dublin.

Thursday, April 16th, 1953, at 8 p.m.

Lecture, **The Influence of Chemistry on Medical Practice,** by Professor E. C. Dodds, F.R.S. Joint meeting with the Royal Institute of Chemistry, the Society of Chemical Industry, and the Institute of Chemistry of Ireland, to be held at Cork.

Saturday, April 18th, 1953, at 7.45 p.m.

Lecture, **The Influence of Chemistry on Medical Practice,** by Professor E. C. Dodds, F.R.S. Joint meeting with the Royal Institute of Chemistry, the Society of Chemical Industry, and the Institute of Chemistry of Ireland, to be held in the Chemistry Department, University College, Galway.

MANCHESTER.

Friday, April 10th, 1953, at 6.30 p.m.

Lecture, **Nature of Toxic Action,** by Dr. M. W. Goldblatt. Joint meeting with the Royal Institute of Chemistry and the Society of Chemical Industry, to be held at Reynolds Hall, College of Technology.

NORTH WALES.

Thursday, April 30th, 1953, at 5.45 p.m.

Lecture, **Some Properties of High-polymer Solutions,** by Professor C. E. H. Bawn, Ph.D., F.R.S. Joint meeting with the University College of North Wales Chemical Society to be held in the Department of Chemistry, University College of North Wales, Bangor.

ST. ANDREWS AND DUNDEE.

Thursday, April 9th, 1953, *at* 5.15 *p.m.*

Lecture, **Some Equilibria and Reactions with Sulphur,** by Dr. G. Gee, F.R.S. To be given in the Chemistry Department, University College, Dundee. Arranged by the Chemistry Department. (All Fellows are invited.)

Friday, April 17th, 1953, *at* 5.15 *p.m.*

Royal Institute of Chemistry Lecture, **Some Developments in the Chemistry of Cortisone,** by Professor F. S. Spring, D.Sc., F.R.S. To be given in the Chemistry Department, United College, St. Andrews. (All Fellows are invited.)

Friday, April 24th, 1953, *at* 5.15 *p.m.*

Lecture, **Metal Halide Catalysts,** by Dr. F. Fairbrother. Joint meeting with the University Chemical Society to be held in the Chemistry Department, United College, St. Andrews.

OFFICIAL ANNOUNCEMENTS

DEATHS.

The Council regrets to announce the deaths of the following :

Honorary Fellow.

	Elected.	Died.
Claude Silbert Hudson (Bethesda, U.S.A.)	June 2nd, 1949.	Dec. 27th, 1952.

Fellows.

John Samuel Strafford Brame (S.E.3)	Dec. 6th, 1894.	Dec. 10th, 1952.
Meredith Gwynne Evans (Manchester)	Oct. 24th, 1940.	Dec. 25th, 1952.
Izaak Goldrei (Edgware)	Mar. 27th, 1941.	Apr. 27th, 1952.
William Jacob Jones (Cardiff)	May 5th, 1910.	Oct. 14th, 1952.

CONGRATULATIONS.

The congratulations of the Council have been conveyed to the following Fellows whose names appear in the New Year Honours List :

C.B.

Robert Spence (Harwell)

C.B.E.

Donald Neil McArthur (Aberdeen)

ELECTION OF NEW FELLOWS.

The following 59 Candidates were elected Fellows of the Society on January 22nd, 1953 :

Syed Shabbir Nabi Abidi.
Rudolf Aeschbacher.
John S. Belew.
Shyam Chand Bose.
Paul Boulanger.
Robert Neilson Boyd.
Roland Ellett Bream.
John Robert Clifton.
Lester S. Cohen.
James David Coombes.
John Joseph Denton.
Jacob Dijkstra.
M. Phyllis Doerner.
Alan James Douglas.
Ronald Stanley Edmundson.
Roy Henry Gigg.
Rinoud Kamel Hanna.
Eric David Harris.
David Harrison.
Keith Reginald James Horner.
Martin Everett Hultquist.
Hasan Asghar Kazmi.
Peter Francis Knewstubb.
John Ronald Lewis.
William Stanley Lindsay.
John William Martin.
Robert Lloyd-Jones.
Alan Richard Martin.
Poznan Mirosevic-Sorgo.
John Reuben Moger.
Alan Francis Prior.
John Kennedy Rankin.
Colin Bernard Reese.
Mohamed Aly Riaz.
Frederick A. H. Rice.
Hugh Colin Richards.
Robert Rudham.
Alan Rutt.
Robert Charles Sheppard.
Wynford Lewis Sheppard.
Derek Arthur Silk.
Raymond John Dunstood Smith.
Satyendra Swaroopa.
Arnold Tanenbaum.
John Hammond Thompson.
Alan Vanterpool.
Gerardus Hendricus Visser.
Peter Waterhouse.
Graham James Waterman.
Frank L. Weisenborn.
Victor Harold Wentworth.
Alick William Westrup.
Alan William White.
Peter White.
Raymond Martin White.
Alan Wilkinson.
Frederick Peter Woodford.
John Josiah Wren.
Ian Wright.

PUBLICATIONS OF THE AMERICAN CHEMICAL SOCIETY.

The reciprocal agreement under which Fellows of the Chemical Society may obtain a discount of 10 per cent. on the price of American Chemical Society publications will be continued in 1953. The following is a schedule of subscription rates. It will be noted that one-, two-, or three-year subscription rates have been introduced giving a substantial

saving to those who subscribe for more than one year. Multiple-year subscription rates do not apply to *Chemical Abstracts*. Fellows are reminded that the discount of 10 per cent. applies to the subscription rate only and cannot apply to the cost of postage :

	Subscription rates.			Postage—per annum (for addresses outside U.S.A. and Canada.
	One year.	Two years.	Three years.	
	$	$	$	$
Journal of The American Chemical Society	14.00	26.00	38.00	3.00
Chemical Abstracts (with indices)	60.00	—	—	2.70
Chemical Abstracts (without indices, sold only to subscribers to one complete set for same calendar year)	24.00	—	—	2.70
Industrial and Engineering Chemistry ...	5.00	8.00	11.00	2.70
Analytical Chemistry	4.00	7.00	10.00	1.20
Industrial and Engineering Chemistry and Analytical Chemistry (combination) ...	8.00	13.00	18.00	3.90
Chemical and Engineering News.....	6.00	10.00	14.00	2.25
Journal of Physical Chemistry	10.00	18.00	26.00	1.20
Agricultural and Food Chemistry * :				
Starting with first year.....	4.50	9.50	13.50	1.50
Starting with second year	6.00	11.00	15.00	1.50

* A fortnightly publication of which nineteen numbers only will be published in the first year. Priced on *pro rata* basis.

Applications should be made direct to The American Chemical Society, 1155, Sixteenth Street, N.W., Washington 6, D.C., U.S.A., and it should be noted that permission to remit money abroad must be obtained through a bank.

PHYSICAL SOCIETY COLOUR GROUP.

The Council of the Chemical Society has accepted an invitation to become a participating Society in the work of the Physical Society Colour Group. The objects of the Group are :

(i) To provide an opportunity for the various groups of people concerned with colour—physicists, chemists, industrialists, etc.—to meet and become familiar with each other's problems ;

(ii) To enable a representative opinion to be formed on various questions of standardisation, specification, nomenclature, etc. ;

(iii) Generally to encourage colorimetric investigations and to ensure that this country shall keep abreast of developments abroad.

Fellows of the Chemical Society may become members of the Group on payment to the Treasurer of The Physical Society of an annual subscription of 5*s*. Details of the Group's meetings and other activities may be obtained from Dr. S. T. Henderson, Acting Honorary Secretary, Physical Society Colour Group, The Thorn Electrical Industries, Ltd., Great Cambridge Road, Enfield, Middlesex.

ROYAL PHOTOGRAPHIC SOCIETY CENTENARY.

Dr. W. H. Mills, F.R.S., represented the Society at the Centenary Celebrations of the Royal Photographic Society on January 20th, 1953 and presented the following address :

THE CHEMICAL SOCIETY

TO

THE PRESIDENT, COUNCIL, FELLOWS AND ASSOCIATES OF

THE ROYAL PHOTOGRAPHIC SOCIETY

WE, THE PRESIDENT, COUNCIL, AND FELLOWS OF THE CHEMICAL SOCIETY, send our warmest greetings and felicitations on the occasion of the celebration of the Centenary of the foundation of the Royal Photographic Society.

We recall with satisfaction the many improvements which the science of chemistry has contributed to the science and to the art of photography. Photography in its turn has contributed notably to the development of scientific aids to chemical research.

It is our earnest wish that the Royal Photographic Society will continue to flourish and will contribute in ever-increasing measure to the development of science and to the well-being of mankind.

Signed on behalf of the Chemical Society,

C. K. INGOLD, *President.*
W. A. AKERS, *Treasurer.*
H. BURTON, E. D. HUGHES, L. E. SUTTON, *Honorary Secretaries.*

INSTITUTE OF PHYSICS—ERRORS IN THE A.S.T.M. INDEX.

The A.S.T.M. Index of *X*-ray powder-diffraction data has now been in use for about ten years, and it is recognised that it contains a number of wrong identifications which are likely to lead to confusion. The *X*-ray Analysis Group of The Institute of Physics therefore proposes to collect information on the errors which have been observed by users of the Index and to publish as soon as possible in some suitable way a list of all those errors which seem to be substantiated. It is believed that many, if not all, of these errors have by now been noted by various workers, and may in some cases have been mentioned casually in their publications, but in order to be of real use to others it is necessary that they should all be published collectively. Accordingly, everyone who has noted such errors is asked, whether he has already published them or not, to send the details to Dr. A. J. C. Wilson, University College, Cathays Park, Cardiff.

MINUTES OF SCIENTIFIC MEETINGS

Minutes of a

SCIENTIFIC MEETING

held at Burlington House on January 22nd, 1953, at 7.30 p.m.

The President, Professor C. K. INGOLD, D.Sc., F.R.S., was in the Chair and welcomed Dr. Ralph W. G. Wychoff, Science Attache to the United States Embassy, who was present at the meeting.

MINUTES.

The Minutes of the Scientific Meeting held at Burlington House on December 18th, 1952, were read and were confirmed and signed.

VACANCIES ON COUNCIL.

The list of vacant places due to be filled at the Annual General Meeting to be held on March 27th, 1953, was read.

FORMAL ADMISSION OF FELLOWS.

The following were admitted Fellows of the Society: N. Stowlow, A. Aebi, D. C. Cusworth, J. Morgan, Y. Ahmed, J. G. Douglas, John S. Harding, K. D. E. Whiting, R. Pettit, B. D. West, M. E. Baguley.

PEDLER LECTURE.

After a brief introduction the President called upon Professor R. P. Linstead, C.B.E., D.Sc., F.R.S., to deliver the Pedler Lecture entitled, "Discoveries among Conjugated Macrocyclic Compounds." At the conclusion of the lecture a vote of thanks to Professor Linstead, proposed by Sir John Simonsen, D.Sc., F.R.S., was carried with acclamation.

LIST OF APPLICATIONS FOR FELLOWSHIP

(Fellows wishing to lodge objection to the election of these candidates should communicate with the Honorary Secretaries within ten days of the date of publication of the Journal *for February,* **1953.** *Such objections will be treated as confidential. The forms of application are available in the Library.)*

Acton, John, B.Sc. (Lond.). British. 7, Gunterstone Road, West Kensington, W.14. Industrial Research Chemist. *Signed by:* R. Royer, F. C. Lloyd, M. F. Lappert.

Aeschbach, Peter Richard, Dipl.Ing.Chem. and Dr.sc.Techn. (Zurich). Swiss. Craig-y-don, Llangollen, N. Wales. Research Chemist at Monsanto Chemicals Ltd., Ruabon. *Signed by:* B. E. Wilde, A. H. Spivey, K. C. Bryant.

***Akroyd, Philip,** B.Sc. (Sheffield). British. 25, Court Lane, Highroad Well, Halifax. Student. *Signed by:* A. H. Lamberton, T. S. Stevens, P. A. H. Wyatt.

***Armarego, Wilfred Louis Florio.** British. 7, Rue Hatassou, Sidi Gaber, Alexandria, Egypt. Student. *Signed by:* Y. Iskander, N. Fakhoury, G. Soliman.

***Atkinson, Maurice Raymond,** B.Sc. (Tasmania). British. 16, Rupert Avenue, Newtown, Tasmania, Australia. Research. *Signed by:* I. R. C. Bick, J. B. Polya, D. A. Craw.

***Auld, James Beattie.** British. 66, Sandgate, Ayr. Student. *Signed by:* F. D. Gunstone, J. C. Speakman, J. Bell.

***Baker, Bryan William,** B.Sc. (Lond.), A.R.I.C., A.R.C.S. British. 7, Sheredan Road, Highams Park, E.4. Research Student. *Signed by:* B. C. L. Weedon, L. Crombie, J. H. Golden.

Baker, Edward Herbert, Ph.D. (Lond.), D.I.C., A.R.I.C. British. 65, Silver Crescent, Chiswick, W.4. Physical Chemist at G.E.C. *Signed by:* C. H. L. Goodman, J. W. Spence, E. G. Cowley.

Barclay, Gordon Alfred, Ph.D. (Sydney). British. Flat 6, 78, Alt Street, Ashfield, N.S.W., Australia. Lecturer at N.S.W. University of Technology. *Signed by:* R. S. Nyholm, L. N. Short, G. W. K. Cavill.

***Bassous, Ernest.** Egyptian. 202, Avenue Fouad I, Alexandria, Egypt. Student in the Faculty of Science, Alexandria University. *Signed by:* N. Fakhoury, Y. Iskander, G. Soliman.

***Benjamin, Lawrence.** British. 162, Bilton Road, Perivale, Greenford, Middx. Student at King's College, W.C.2. *Signed by:* D. H. Hey, V. Gold, C. S. Salmon.

***Block, Hermann.** British. 10, Old Oak Road, Acton, W.3. Student at Kings College, W.C.2. *Signed by:* S. H. Harper, K. C. Sleep, G. H. Williams.

***Bowen, Rodney.** British. 51, Havelock Road, Bognor Regis, Sussex. Student at King's College, W.C.2. *Signed by:* S. H. Harper, G. H. Williams, A. J. B. Robertson.

***Bowers, Albert,** B.Sc. (Lond.). British. 185, Nuthurst Road, New Moston, Manchester 10. Student at Manchester University. *Signed by:* E. R. H. Jones, T. G. Halsall, M. C. Whiting.

Brookes, Harold Edwin, B.Sc. (Lond.), A.R.I.C. British. 79, Julian Road, West Bridgford, Nottingham. Analyst at Boots Pure Drug Co. *Signed by:* T. J. King, D. O. Jordan, D. C. Garrett.

***Brown, David Arthur,** B.Sc. (Lond.). British. 59, Harford Drive, Watford, Herts. Student at Queen Mary College. *Signed by:* R. F. Hudson, D. M. Grove, R. F. Garwood.

***Brown, Donald Houston,** B.Sc. (Glas.). British. 33, Barbadoes Road, Kilmarnock, Ayrshire. Student. *Signed by:* J. A. Mair, J. A. D. Jeffreys, D. S. Payne.

Butcher, Robert James. British. 40, Auckland Road, Potters Bar, Middlesex. Development Research Chemist. *Signed by:* E. J. Chappel, A. A. Pedrick, F. James.

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PAPERS RECEIVED

(List of Papers received between December 20th, 1952, and January 14th, 1953.)

" The solubility of Orange II in sodium chloride and sodium sulphate solutions." By A. B. MEGGY.

" Usnic acid. Part IX. A revised structure for usnolic acid, and the resolution of (±)-usnic acid." By F. M. DEAN, P. HALEWOOD, S. MONGKOLSUK, ALEXANDER ROBERTSON, and W. B. WHALLEY.

" Oxidation of catechol." By G. R. CLEMO and F. K. DUXBURY.

" The nitration of guanidine in sulphuric acid. Part II. Kinetics of *N*-nitration of the guanidinium ion and denitration of nitroguanidine." By GWYN WILLIAMS and R. J. J. SIMKINS.

" Friedel–Crafts reactions of triphenylene." By NG. PH. BUU-HOÏ and PIERRE JACQUIGNON.

" Substituted benzidines and related compounds as reagents in analytical chemistry. Part XII. Reagents for the precipitation of sulphate." By R. BELCHER, A. J. NUTTEN, and W. I. STEPHEN.

" The conversion of thiophen into 4 : 7 : 8 : 9-tetrahydro-4 : 7-*endo*sulphinylthionaphthen 1 : 1-dioxide." By W. DAVIES and F. C. JAMES.

" The lanthanon content of King Island scheelite ore." By R. C. VICKERY.

" Usnic acid. Part VIII. *C*-Diacetyl derivatives of phloroglucinol and *C*-methylphloroglucinol." By F. M. DEAN and ALEXANDER ROBERTSON.

" Some extensions of the synthesis of hydroxyindoles from *p*-benzoquinones." By R. J. S. BEER, H. F. DAVENPORT, and ALEXANDER ROBERTSON.

" The thermochromism of diphenylmethyleneanthrone." By R. J. W. LE FÈVRE and (MISS) I. YOUHOTSKY.

" The use of iodine and potassium acetate in the dehydrogenation of tetrahydro*iso*quinoline. The synthesis of 7-nitro*iso*quinoline." By M. D. POTTER and E. P. TAYLOR.

" Triterpenoids. The crystal structure of lanostenyl iodoacetate." By J. FRIDRICHSONS and A. MCL. MATHIESON.

" Benzothioxoles, benzothioxan, and bisarylthioalkanes." By DOUGLAS GREENWOOD and HERBERT AUBREY STEVENSON.

" Steroids and Walden inversion. Part X. The reconversion of D-homosteroids into steroids." By R. J. W. CREMLYN, D. L. GARMAISE, and C. W. SHOPPEE.

" Tracer studies in the aquation and hydrolysis of cobalt complexes." By C. A. BUNTON and D. R. LLEWELLYN.

" Thermogravimetric curves for the decomposition of octa-ammino-μ-amino-μ-nitrodicobaltic sulphate and dichlorobisethylenediaminocobaltic hexachlorostibnate." By D. GIBBONS.

" The chromatography of gases and vapours. Part II." By D. H. JAMES and C. S. G. PHILLIPS.

" The hydrolysis of acetic anhydride. Part II. Catalysis by pyridine." By S. L. BAFNA and V. GOLD.

" The hydrolysis of acetic anhydride. Part II. The catalytic efficiency of a series of tertiary amines." By V. GOLD and E. G. JEFFERSON.

" Quantitative studies of the reactivities of mixed carboxylic anhydrides. Part IV. The hydrolysis and decomposition of acetic formic anhydride." By V. GOLD and E. G. JEFFERSON.

" α-Methylenic reactivity in olefinic systems. Part V. The stannic chloride-catalysed reaction of trimethylethylene with formaldehyde polymers." By JOHN W. BAKER and L. E. ADDY.

" The determination of *C*-methyl groups in some unsaturated straight-chain compounds." By A. D. CAMPBELL and V. J. CHETTLEBURGH.

" Corrections of the published literature on some simple pyrimidines." By S. BIRTWELL.

" Complexes of pyrimidines with urea and related compounds." By S. BIRTWELL.

" A theoretical discussion of the behaviour of fatty molecules. Part II. Spatial structure and ' lateral ' attack." By G. PHILIP GIBSON.

" A theoretical discussion of the behaviour of fatty molecules. Part III. Spatial rotation and inversion." By G. PHILIP GIBSON.

" Griseofulvin. Part VII. Dechlorogriseofulvin." By J. MACMILLEN.

" Geometrical isomerism of azo-compounds." By NEIL CAMPBELL, ANDREW W. HENDERSON, and DUNCAN TAYLOR.

" Coenzyme A. Part VIII. The synthesis of pantotheine-4′ phosphate (*Acetobacter* stimulatory factor), a degradation product of the coenzyme." By J. BADDILEY and E. M. THAIN.

" The synthesis of thyroxine and related substances. Part XIII. Some further analogues of thyroxine." By J. H. BARNES, R. C. COOKSON, G. T. DICKSON, J. ELKS, and V. D. POOLE.

" Triterpenoids. Part XI. Some stereospecific reactions in the lanostadienol (lanosterol) series." By C. S. BARNES and D. H. R. BARTON.

" Infra-red spectroscopy and structural chemistry. Part V. Hydroxyphthalides." By L. A. DUNCANSON, JOHN FREDERICK GROVE, and (MRS.) J. ZEALLEY.

" *C*-Methylation of 4 : 6-dihydroxycoumaran-3-one." By T. P. C. MULHOLLAND and G. WARD.

" Aromatic azo-compounds. Part I. Oxidation of *cis*- and *trans*-azobenzenes." By G. M. BADGER, R. G. BUTTERY, and G. E. LEWIS.

" Aromatic azo-compounds. Part II. Oxidation of substituted azobenzenes." By G. M. BADGER and G. E. LEWIS.

" Aromatic azo-compounds. Part III. Oxidation of azonaphthalenes and phenylazonaphthalenes." By G. M. BADGER and G. E. LEWIS.

" Aromatic azo-compounds. Part IV. The absorption spectra of azo- and azoxy-compounds." By G. M. BADGER and R. G. BUTTERY.

LOCAL REPRESENTATIVES OF THE CHEMICAL SOCIETY

Aberdeen.	R. H. Thomson, Ph.D., F.R.I.C., Chemistry Department, The University, Old Aberdeen.
Australia.	Professor A. J. Birch, M.Sc., D.Phil., Department of Organic Chemistry, The University, Sydney, N.S.W., Australia.
Birmingham.	L. L. Bircumshaw, M.A., D.Sc., Department of Chemistry, The University, Edgbaston, Birmingham, 15.
Bristol.	F. H. Pollard, B.Sc., Ph.D., A.R.I.C., Chemistry Department, The University, Woodland Road, Bristol.
Cambridge.	B. Lythgoe, Ph.D., Organic Chemistry Department, The University, Cambridge.
Canada.	W. D. McFarlane, M.A., Ph.D., The Laboratories, The Canadian Breweries Ltd., 496, Queen Street East, Toronto, 2, Canada.
Ceylon.	M. U. S. Sultanbawa, B.Sc., Ph.D., A.R.I.C., Department of Chemistry, The University, Colombo, Ceylon.
Edinburgh.	T. R. Bolam, D.Sc., Chemistry Department, King's Buildings, West Mains Road, Edinburgh.
Exeter.	K. Schofield, B.Sc., Ph.D., Department of Chemistry, Washington Singer Laboratories, Prince of Wales' Road, Exeter.
Glasgow.	F. D. Gunstone, B.Sc., Ph.D., Chemistry Department, The University, Glasgow, W.2.
Hull.	Professor Brynmor Jones, Sc.D., Ph.D., F.R.I.C., University College, Hull.
India.	Sir Shanti S. Bhatnager, O.B.E., D.Sc., F.R.S., Secretary, Ministry of Natural Resources and Scientific Research, New Delhi, India.
Irish Republic.	V. C. Barry, D.Sc., F.R.I.C., Medical Research Council of Ireland, The Laboratories, Trinity College, Dublin.
Leeds.	P. A. Briscoe, B.Sc., A.R.I.C., Organic Chemistry Department, The University, Leeds, 2.
Liverpool.	A. K. Holliday, B.Sc., Ph.D., Department of Physical and Inorganic Chemistry, The University, Liverpool.
,,	L. A. Haddock, M.Sc., F.R.I.C., Imperial Chemical Industries, Ltd., Research Department, Widnes Laboratory, Widnes.
Manchester,	G. R. Barker, B.Sc., Ph.D., Chemistry Department, The University, Manchester, 13.
,,	M. A. T. Rogers, B.Sc., Ph.D., A.R.I.C., Imperial Chemical Industries, Ltd., Hexagon House, Blackley, Manchester.
Newcastle and Durham.	G. A. Swan, B.Sc., Ph.D., F.R.I.C., Department of Chemistry, King's College, Newcastle-on-Tyne, 1.
New Zealand.	Professor S. N. Slater, M.Sc., D.Phil., A.R.I.C., Chemistry Department, Victoria University College, Wellington, New Zealand.
Northern Ireland.	H. Graham, D.Sc., A.R.I.C., 26, Malone Hill Park, Belfast.
North Wales.	W. Rogie Angus, M.A., D.Sc., Ph.D., F.R.I.C., Department of Chemistry, University College of North Wales, Bangor.
Nottingham.	D. O. Jordan, M.Sc., Ph.D., A.R.I.C., The University, University Park, Nottingham.
Oxford.	H. M. N. H. Irving, M.A., D.Phil., F.R.I.C., Inorganic Chemistry, Laboratory, South Parks Road, Oxford.
Pakistan.	M. I. D. Chughtai, M.Sc.Tech., Ph.D., A.R.I.C., Punjab University Institute of Chemistry, The Mall, Lahore, Pakistan.
St. Andrews and Dundee.	H. T. Openshaw, M.A., D.Phil., Chemistry Department, United College, St. Andrews.
Sheffield.	A. H. Lamberton, B.Sc., Ph.D., Chemistry Department, The University, Sheffield, 10.
South Africa.	Professor W. Pugh, Ph.D., B.Sc., F.R.I.C., Chemistry Department, University of Cape Town, Rondebosch, S. Africa.
Southampton.	K. R. Webb, B.Sc., Ph.D., A.R.I.C., The University, Southampton.
South Wales.	K. W. Sykes, M.A., B.Sc., D.Phil., Department of Chemistry, University College, Singleton Park, Swansea.

PROCEEDINGS
OF THE
CHEMICAL SOCIETY

SCIENTIFIC MEETINGS DURING MAY, 1953

LONDON.

Thursday, May 7th, 1953, *at* 7.30 *p.m.*

The following papers will be read and discussed:

"The catalyic deuteration of organic compounds. Part III. Exchange reactions of saturated aliphatic carboxylic acids." By J. Bell, T. Hill, K. A. Macdonald, R. I. Reed, and (in part) A. MacDonald.

"The catalytic deuteration of organic compounds. Part IV. The deuteration of optically active lactic acid." By J. Bell, K. A. Macdonald, and R. I. Reed.

"Studies on biological methylation. Part XIV. The formation of trimethylarsine and dimethyl selenide in cultures of *Scopulariopsis brevicaulis or Aspergillus niger* using methyl sources containing ^{14}C." By F. Challenger, D. B. Lisle, and P. B. Dransfield.

"Oxygen exchange between nitric acid and water. Part III. The nitrous acid catalysed exchange." By C. A. Bunton and E. A. Halevi.

BRISTOL.

Thursday, May 5th, 1953, *at* 7 *p.m.*

Lecture, **Research and Development on Refractory Materials,** by Dr. A. T. Green, O.B.E. Joint meeting with the Royal Institute of Chemistry, the Society of Chemical Industry, and the Institute of Fuel, to be held in the Chemistry Department of the University.

IRISH REPUBLIC.

Friday, May 29th, 1953, *at* 7.45 *p.m.*

Lecture, **The Behaviour of Hydrogen Peroxide as a Solvent,** by Professor W. F. K. Wynne-Jones, D.Sc. Joint meeting with the Werner Society to be held in the Chemistry Department, Trinity College, Dublin.

NEWCASTLE AND DURHAM.

Friday, May 8th, at 5.30 *p.m.*

Bedson Club Lecture, **Allene Chemistry,** by Professor E. R. H. Jones, D.Sc., F.R.S. To be given in the Chemistry Building, King's College, Newcastle-on-Tyne. (All Fellows are invited.)

NORTHERN IRELAND.

Tuesday, May 19th and Wednesday, May 20th, 1953.

Symposium on Eggs. Joint meeting with the Royal Institute of Chemistry and the Society of Chemical Industry, to be held in the Department of Agriculture Lecture Theatre, Queen's University, Belfast.

SOUTH WALES.

Thursday, May 14th, 1953, *at* 5.30 *p.m.*

Lecture, **Structural Relations of Natural Products,** by Sir Robert Robinson, O.M., D.Sc., LL.D., F.R.S. Joint meeting with the University College Chemical Society to be held in the Chemistry Department, University College of Swansea.

OFFICIAL ANNOUNCEMENTS

DEATHS.

The Council regrets to announce the deaths of the following :

	Elected.	Died.
Ralph Walton Bost (N. Carolina)	Sep. 18th, 1941.	Sep. 22nd, 1951.
Joseph Michael Connolly (Leicester)	Feb. 18th, 1937.	June 28th, 1952.
William Douglas Dick (Glasgow)	June 19th, 1941.	Jan. 11th, 1953.
Francis Clifford Dyche-Teague (S. Ruislip).....	May 6th, 1909.	Feb. 3rd, 1953.
Robert Steel Finlow (Colwyn Bay)	May 5th, 1904.	Jan. 2nd, 1953.
Leon Haskelberg (Rehovoth)	Dec. 5th, 1935.	Jan. 17th, 1953.
Thomas Reginald Hodgson (Manchester)	Dec. 1st, 1904.	Dec. 18th, 1952.
Edward Hope (Oxford)	Dec. 5th, 1912.	Feb. 7th, 1953.
Margaret Le Pla (Ealing)	May 5th, 1921.	Jan. 26th, 1953.
Charles Lessner (Carril, Spain)	June 18th, 1902.	1952
James Leslie Auld Macdonald (Markinch)	June 20th, 1912.	Dec. 29th, 1952.

CONGRATULATIONS.

The President has conveyed the congratulations of the Society to William Ernest Wheeler (Bristol) who completed 60 years of Fellowship on 16th February, 1953, and to the following, who completed 50 years of Fellowship on 18th February, 1953.

Hubert William Bywaters (Great Chesterford).
William Henry Cadman (Harleston).
Francis George Cousins (Bristol).
Cecil Henry Desch (London, S.W.1).
Robert Crosbie Farmer (Chelsfield).
Thomas Crosbie Walsh (Purley).
David John Williams (Bath).

ELECTION OF NEW FELLOWS.

The following 88 Candidates were elected Fellows of the Society on February 26th, 1953 :

Derek Norman Abele.
David Michael Adams.
Richard James Paul Allan.
Fernando Antonio Alves.
William P. Angers.
John Dudley Backhurst.
Alfred Robert Bader.
Derek Harry Ball.
William Black.
Jorge Agustin Luis Brieux.
Thomas Arthur Brock.
Albert William Burgstahler.
David Allan Cadenhead.
Nelson Henry Cantwell.
Harold Michael Caws.
Arthur Frederick Chaplin.
Richard David Chapman.
John Herbert Chesterfield.
Alan Frank Clifford.
Lester Earl Coleman.
Maureen Louise Coles.
Arthur Clay Cope.
Ian Robert Henry Crail.
David George Crowther.
Louis Scott Cruickshank.
Frederick Culkin.
Kenneth McArthur Dargie.
Peter John Dolby.
Henry Charles Duffin.
James Easton.
Norman Francis Elmore.
Maurice Everett.
Eric John Forbes.
Leon Goldman.
Peter Theordor Good.
Peter John Goodford.
James Grimshaw.
John Douglas Hague.
Michael Hale.
Harold Hart.
John Russell Hawthorne.
Allan Stuart Hay.
William Ainslie Hewett.
David Welldon Hyam.
Geoffrey Stewart Ingram.
James Jiu.
Emrys Robert Horseman Jones.
Norman Wayne Kalenda.
Noel Spencer Kirby.
Geoffrey Frank Liptrot.
William Joseph McAlroy.
Hugh Telfer McCracken.
Alan Graham MacDiarmid.
Thomas Lacey Macdonald.
Neil McKelvie.
Donald John Mathewson.

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Ian Alastair Menzies.
Howard Neilson Moulden.
Michael John Newlands.
William Robert Owen.
Irwin Jacob Pachter.
Anthony Charles Mortimer Panting.
Robert Partridge.
Kevin Thomas Potts.
Brian Christopher Reid.
Joanna Mary Roberts.
William Robinson.
Arthur F. St. Andre.
Indra Sanghi.
John Louis Scotland.
James Henry Semark.
David Mitchell Shepherd.
George Sosnovsky.
Peter John Stevens.
Charles Stirling.
Max Sussmann.
Peter Armin Thomas Swoboda.
Tervor John Taylor.
Peter Raymond Thomas.
Andrew Stephen Tomcufcik.
Coy Webster Waller.
Gladwyn Percy Wannigama.
Andrew Edwin Pryde Watson.
Alan John Wilkinson.
Roy Maurice Williams.
Herbert Winning.
Dennis Graham St. Leger Winter.
Donald Wright.

REPORT OF COUNCIL AND ACCOUNTS FOR 1952.

The Report of Council and the accounts for 1952 will be published in the *Journal* later this year. Fellows may obtain preprints on application to the General Secretary.

THE CORDAY–MORGAN MEDAL AND PRIZE.

The Corday–Morgan Medal and Prize for 1951 has been awarded to Dr. Frederick Sanger.

The Corday–Morgan Medal and Prize, consisting of a Silver Medal and a monetary Prize of 150 Guineas, is awarded annually to the chemist of either sex and of British Nationality, who, in the judgment of the Council of the Chemical Society, shall have published during the year in question the most meritorious contribution to experimental chemistry, and who shall not, at the date of publication, have attained the age of thirty-six years. The Council has power to suspend the award in any year in which no suitable candidate presents himself or is brought to the notice of the Council.

Copies of the rules governing the Award may be obtained from the General Secretary. Applications or recommendations in respect of the Award for the year 1952 must be received not later than December 31st, 1953, and applications for the Award for 1953 are due before the end of 1954.

FLINTOFF MEDAL AND PRIZE.

The Council announces that the first award of the Flintoff Medal and Prize will be made early in 1954.

This award, consisting of a Medal and a monetary prize, arises from a bequest made to the Society by the late Mr. Robert John Flintoff. It will be made once every three years subject to there being a candidate who, in the opinion of the Council of the Chemical Society, is of sufficient merit. The award will be made to the Fellow of the Society, of either sex, who has made the most meritorious contribution to the knowledge of the relations between chemistry and botany. The verdict of the Council in all matters connected with the award is final.

LIBRARY.

The Library will close for the Easter holiday at 1 p.m. on Thursday, April 2nd, and re-open at 10 a.m. Wednesday, April 8th, 1953.

ACKNOWLEDGMENTS.

Acknowledgment is made of gifts of the Society's publications from Miss N. J. Broadway, Dr. A. F. Campbell, Mr. R. Downing, Mr. H. G. Emblem, Professor A. Findlay, Mr. H. H. Hughes, Mr. F. O. Isaacs, and Dr. A. L. Stern.

LOCAL REPRESENTATIVE FOR SHEFFIELD.

The Council has accepted with regret the resignation of Dr. A. H. Lamberton as Local Representative for Sheffield, and has appointed Mr. H. J. V. Tyrrell as his successor.

F. S. KIPPING MEMORIAL FUND.

The Society has been asked to draw the attention of Fellows to an appeal which has been made to friends and past students of the late Professor F. S. Kipping for subscriptions to a memorial fund to commemorate his work for chemistry and as a teacher. Contributions amounting to £1070 have already been made, but there must be many past students who, through change of address or other reasons, have not yet received an appeal. Subscriptions or requests for information should be sent to Col. F. C. Laxton, The Chemistry Dept., The University of Nottingham.

MINUTES OF SCIENTIFIC MEETINGS

Minutes of a

SCIENTIFIC MEETING

held in the Chemistry Department, University College, St. Andrews, on January 30th, 1953, at 5.15 p.m.

The President, Professor C. K. INGOLD, D.Sc., F.R.S., was in the Chair and expressed his pleasure in presiding at an official meeting of the Society at St. Andrews.

FORMAL ADMISSION OF FELLOWS.

The following were admitted Fellows of the Society: J. Read, M. L. Coles, J. Y. McDonald, D. Calvert, D. J. Mathewson, K. M. Dargie, T. L. Macdonald, R. B. Cundall, A. Morgan, R. T. Potter, D. J. Stormont, G. C. Davidson, I. E. Climie, I. M. Aitken, J. L. Scotland.

LECTURE.

The President called upon Professor R. G. W. Norrish, Sc.D., F.R.S., to deliver the Lecture entitled, "The Study of Combustion by the Method of Flash Photolysis." At the conclusion of the lecture a vote of thanks to Professor Norrish, proposed by Professor D. H. Everett, was carried with acclamation.

Minutes of a

SCIENTIFIC MEETING

held in the Chemistry Lecture Theatre, the University of Manchester, on February 3rd, 1953, at 6.30 p.m.

SIR JOHN SIMONSEN, D.Sc., F.R.S., Vice-President, was in the Chair, and expressed his great pleasure in presiding at an Official Meeting of the Society in Manchester. Before opening the proceedings the Chairman called upon the audience to stand in memory of the late Professor M. G. Evans.

FORMAL ADMISSION OF FELLOWS.

The following were admitted Fellows of the Society: D. R. Lewis, C. H. Vasey, N. Greenhalgh, D. C. Ayres, C. W. Brown, A. S. Dunn, G. S. Davy, K. J. Wrigley, S. Ridley, J. M. Guider, J. L. Beton, A. A. Wagland, D. Richardson, R. R. Goodall, A. F. Trotman-Dickenson, C. V. Caine, G. N. Richards, J. C. Brown, D. Buckley.

TILDEN LECTURE.

The Chairman called upon Mr. H. M. Powell, M.A., B.Sc., to deliver the Tilden Lecture entitled, "The Chemistry of Intermolecular Compounds." At the conclusion of the lecture a vote of thanks to Mr. Powell, proposed by Professor E. R. H. Jones, was carried with acclamation.

Minutes of a

SCIENTIFIC MEETING

held at Burlington House on February 5th, 1953, at 2.30 p.m.

The President, Professor C. K. INGOLD, D.Sc., F.R.S., was in the Chair.

MINUTES.

The Minutes of the Scientific Meetings held at Burlington House on January 22nd, at University College, St. Andrews on January 30th, and at the University of Manchester on February 3rd, were read, and were confirmed and signed.

FORMAL ADMISSION OF FELLOWS.

The following were admitted Fellows of the Society: G. Benson, R. J. D. Smith, F. A. H. Rice, A. F. Thomas, F. C. Newman, J. D. Bu'Lock, J. L. H. Allan, P. B. Lumb, R. Ahmad, P. Nayler, G. H. Whitfield, P. C. Wailes, E. London.

SYMPOSIUM.

The President called upon Professor E. R. H. Jones, F.R.S., to open the Symposium entitled, "Acetylene Chemistry," and invited him to take the Chair. The following contributions were made and discussed:

"Anionotropic and Prototropic Changes in Acetylenic Systems," by Dr. E. A. Braude.

"Prototropic Rearrangements of Acetylenic Acids," by Dr. M. C. Whiting.

"The Pyrolysis of Acetoacetates of Acetylenic Carbinols," by Dr. R. N. Lacey.

"The Reaction of Butadiene in the Presence of Acetylene–polymerising Catalysts," by Dr. H. W. B. Reed.

"Synthetical Studies in the Carotenoid Field," by Dr. B. C. L. Weedon.

The meeting then adjourned until 7.30 p.m. when the following contributions were made:

"Some Synthetical Applications of Acetylenic Compounds," by Dr. R. A. Raphael.

"Synthetic Polyacetylenes," by Professor E. R. H. Jones.

"Acetylenic Compounds from Plants of the *Compositae* Family," by Professor N. A. Sörensen.

"Chemistry of the Antibiotic Mycomycin," by Dr. W. D. Celmer and Dr. I. A. Solomons.

"The Chemistry of Oenathotoxin and Cicutoxin," by Dr. B. Lythgoe.

After a general discussion a vote of thanks to Professor Jones for arranging the Symposium, and to the contributors to the discussion, proposed by Professor H. Burton, Honorary Secretary, was carried with acclamation.

MEETINGS OUTSIDE LONDON

NORTH WALES.

"Humour and Humanism in Chemistry," by Professor John Read, M.A., Sc.D., F.R.S.

A joint meeting with the University College Chemical Society was held in the Department of Chemistry, University College of North Wales, Bangor, on January 22nd, with Mr. J. R. Turvey, President of the College Chemical Society, in the Chair.

By means of lantern slides and anecdotes obtained from his wide researches into the history of chemistry and from his personal contacts, Professor Read delighted a large audience with his masterly and scholarly lecture.

On the call of Professor S. Peat, F.R.S., a vote of thanks was enthusiastically accorded.

PAPERS RECEIVED

(List of papers received between January 15th and February 23rd, 1953.)

" Some observations on the spectra of anthraquinone derivatives." By R. H. PETERS and H. H. SUMNER.

" Reaction of indane and tetralin with excess of acetylating agent." By G. BADDELEY, E. WRENCH, and R. WILLIAMSON.

" The microanalysis of fluorine-containing organic compounds. Part I. The determination of fluorine." By R. BELCHER, E. F. CALDAS, S. J. CLARK, and (MISS) A. MACDONALD.

" Complex fluorides. Part I. The structural chemistry of some complex fluorides of potassium, rubidium, cæsium, ammonium, and thallium." By B. COX and A. C. SHARPE.

" The enzymic synthesis and degradation of starch. Part XVIII. The minimum chain-length for Q-enzyme action." By STANLEY PEAT, W. J. WHELAN, and J. M. BAILEY.

" Synthesis of *cyclo*hexenones." By MOSHE BORNSTEIN, RAPHAEL PAPPO, and JACOB SZMUSZKOVICZ.

" Cinnolines. Part XXXI. The nature of the $C_{(3)}$-position. Some experiments with 3-substituted cinnolines." By E. J. ALFORD and K. SCHOFIELD.

" The preparation of some *m*- and *p*-alkylanilines." By R. LONG and K. SCHOFIELD.

" Reactions of methazonic acid. Part III. A novel reaction of 3-aminolepidine." By D. W. OCKENDEN and K. SCHOFIELD.

" Reactions of unsaturated compounds. Part X. The oxidation of camphene by chromic oxide." By W. J. HICKINBOTTOM and D. G. M. WOOD.

" Steroids and Walden inversion. Part XI. Acetolysis of the coprostanyl halides." By R. J. BRIDGEWATER and C. W. SHOPPEE.

" The selective absorption of optical antipodes by proteins. Part II." By WILLIAM BRADLEY and GERALD C. EASTY.

" Phthalaldehydes and related compounds. Part II. Synthesis of *iso*gladiolic acid." By J. J. BROWN and G. T. NEWBOLD.

" The oxides of uranium. Part III. The system UO_2–MgO–O." By J. S. ANDERSON and K. D. B. JOHNSON.

" *p*-Aminodimethylaniline. Part VI. Some cationoid halogenations *meta* to a dimethylamino-group." By JOHN H. GORVIN.

" The infra-red absorption of the aldehydic C–H bond." By S. PINCHAS.

" Polynuclear heterocyclic systems. Part VII. Syntheses by means of the Elbs reaction." By G. M. BADGER and R. PETTIT.

" Halogen derivatives of phenyl styryl ketone. Part I. Bromo- and chloro-derivatives." By ROBERT D. ABELL and WALTER SIDDALL.

" Halogen derivatives of phenyl styryl ketone. Part II. Bromo-chloro-derivatives. Two cases of ' extra ' isomers." By ROBERT D. ABELL.

" α-Benzylidenepropiophenone and its halogen derivatives." By ROBERT D. ABELL.

" The electrochemistry of boron trifluoride co-ordination compounds. Part VII. Degrees of ionic dissociation in the molten state." By N. N. GREENWOOD and R. L. MARTIN.

" Syntheses in the morphine series. Part IV. The synthesis of *N*-methylmorphinan." By DAVID GINSBURG and RAPHAEL PAPPO.

" The crystal structures of $ThSe_2$ and Th_7Se_{12}." By R. W. M. D'EYE.

" 2 : 5-Dihydroxy-3 : 6-dimethoxyacetophenone and its degradation by bromine." By G. R. RAMAGE and C. V. STEAD.

" Polarographic behaviour of disubstituted benzenes : relation of $E_{\frac{1}{2}}$ to electron density and activation energy for electrophilic substitution." By (MRS.) E. GERGELY and T. IREDALE.

" Hydrophilic derivatives of 4-aminodiphenyl." By J. N. BAXTER, J. CYMERMAN-CRAIG, and (in part) W. S. GILBERT.

" A new synthesis of *iso*flavones. Part I." By WILSON BAKER, J. CHADDERTON, J. B. HARBORNE, and W. D. OLLIS.

" A new synthesis of *iso*flavones. Part II. 5 : 7 : 2'-Trihydroxy*iso*flavone." By WILSON BAKER, J. B. HARBORNE, and W. D. OLLIS.

" The structure of Neem gum. Part I. The sugars produced on hydrolysis of the gum, and the structure of the aldobiuronic acid." By S. MUKHERJEE and H. C. SRIVASTAVA.

" Ion-exchange in crystals of analcite and leucite." By R. M. BARRER and L. HINDS.

" The constitution of Ciba Yellow 3G." By R. S. STAUNTON and A. TOPHAM.

" The Sommelet reaction. Part IV. The preparation of aliphatic aldehydes." By S. J. ANGYAL, D. R. PENMAN, and G. P. WARWICK.

" The Sommelet reaction. Part V. *N*-Heteroaromatic aldehydes." By S. J. ANGYAL, G. B. BARLIN, and P. C. WAILES.

" The Sommelet reaction. Part VI. The methyleneamines. A proposed mechanism for the reaction." By S. J. ANGYAL, D. R. PENMAN, and G. P. WARWICK.

" *N*-Ethyl(or methyl or phenyl)-*N*-2-halogenoethyl-1'(or 2')-naphthylmethylamines. Part I. Structure and pharmacological activity." By N. B. CHAPMAN and J. W. JAMES.

" The orientation of substitution in the isomeric thiophens. The synthesis of solid thiophthen, thiopheno(2' : 3'-3 : 2)thiophen." By FREDERICK CHALLENGER and JOHN L. HOLMES.

" Some observations on exaltations of molecular refraction." By ERNST D. BERGMANN and ERNST FISCHER.

" The alkaloids of *Senecio ruwenzoriensis*." By M. L. SAPIRO.

" Esters containing phosphorus. Part XI. Ethylphosphonic dichloride containing ^{32}P." By B. C. SAUNDERS and T. S. WORTHY.

" The kinetics of the reaction between thallium(III) and iron(II) in aqueous perchloric acid." By K. G. ASHURST and W. C. E. HIGGINSON.

" Oxidations with phenyl iodosoacetate. Part II. The oxidation of primary aromatic amines." By K. H. PAUSACKER.

" Studies in spectroscopy. Part II. The ultra-violet absorption spectra of halogen-containing aliphatic iodo-compounds, and the relative stability of free halogen-containing alkyl radicals." By R. N. HASZELDINE.

" Some pteridines related to folic acid. Part I. 2-Deamino-analogues." By D. J. BROWN.

" Reactions in carboxylic acid–thionyl chloride systems." By W. GERRARD and A. M. THRUSH.

" Polyene acids. Part VII. Half methyl esters and amides of the muconic acids." By J. A. ELVIDGE, R. P. LINSTEAD, and PETER SIMS.

" The stepwise hydrogenation of dimethyl docosa-10 : 12-diynedioate." By J. P. RILEY.

" The synthesis of sugars from simpler substances. Part VI. Enzymic synthesis of D-*ido*heptulose." By P. A. J. GORIN and J. K. N. JONES.

" Larch ε-galactan. Part II. The isolation of L-arabopyranosyl-β-L-arabinose." By J. K. N. JONES.

" The structure of nickel tetracarbonyl and some disubstituted derivatives." By R. S. NYHOLM and L. N. SHORT.

" The chemistry of reductone. Part III. Linear alkenediols related to reductone." By WESLEY COCKER, DAVID S. JENKINSON, and PETER SCHWARZ.

" Synthesis of analogues of pyridoxine." By MRS. H. DAVOLL and F. B. KIPPING.

" *cyclo*Propanes. Part III. The condensation of 1 : 4-dibromobut-2-ene with ethyl cyano- and aceto-acetate." By R. W. KIERSTEAD, R. P. LINSTEAD, and B. C. L. WEEDON.

" *cyclo*Propanes. Part IV. A new route to some bi*cyclo*[3 : 1 : 0]hexene derivatives." By R. W. KIERSTEAD, R. P. LINSTEAD, and B. C. L. WEEDON.

" Anodic syntheses. Part VIII. New syntheses of 3 : 13 : 19-trimethyltricosanoic acid." By R. P. LINSTEAD, B. R. SHEPHARD, B. C. L. WEEDON, and (in part) J. C. LUNT.

" Intramolecular acylation. Part III. The preparation and ring closure of the α-methoxyphenylglutaric acids." By D. H. HEY and K. A. NAGDY.

" Organometallic and organometalloidal fluorine compounds. Part VII. Trifluoromethyl compounds of phosphorus." By F. W. BENNETT, H. J. EMELÉUS, and R. N. HASZELDINE.

" *iso*Quinoline alkaloids. Part I. The oxidation of tetrahydropapaveroline." By JOHN HARLEY-MASON.

" Ultra-violet absorption spectra of *trans*- and *cis*-stilbenes and their derivatives." Part I. *trans*- and *cis*-stilbenes." By R. N. BEALE and E. M. F. ROE.

" A quantum-mechanical treatment of aliphatic compounds. Part I. The paraffins." By R. D. BROWN.

" Toxic fluorine compounds containing the C–F link. Part IX. Preparation of carbon-labelled sodium fluoroacetate on a micro-scale." By B. C. SAUNDERS and T. S. WORTHY.

" Organic peroxides. Part II. Esters of the permonocarbonic acids." By A. G. DAVIES and K. J. HUNTER.

" Synthesis of poly-(*O*-acetyl-DL-serine) and of poly-DL-serine." By MAX FRANKEL, (MRS.) S. CORDOVA, and M. BREUER.

" Heats of combustion and fomation of some linear polydimethylsiloxanes; the Si–C and Si–O bond-energy terms. By R. THOMPSON.

" Non-coplanarity in ωωω-tribromoacetylmesitylene. By M. CRAWFORD and F. H. C. STEWART.

" Pyrimidine." By N. WHITTAKER.

" The oxidation of phenylhydrazones with perphthalic acid." Part I. By B. M. LYNCH and K. H. PAUSACKER.

" Anionotropic systems. Part II. Syntheses and oxotropic rearrangements in the *cyclo*heptenyl series." By E. A. BRAUDE and W. F. FORBES.

" Stereospecificity in thermal elimination reactions. Part III. The pyrolysis of (−)-menthyl benzoate." By D. H. R. BARTON, A. J. HEAD, and R. J. WILLIAMS.

" The hemicelluloses of esparto grass (*Stipa tenacissima*, L.). The arabinose-rich fraction." By C. O. ASPINALL, E. L. HIRST, R. W. MOODY, and (the late) E. G. V. PERCIVAL.

" Aromatic hydrocarbons. Part LXVI. Heptaphene and 2 : 3-8 : 9-dibenzopicene." By E. CLAR and W. KELLY.

" The thermodynamic properties of methyl nitrate." By PETER GRAY and P. L. SMITH.

" Cumyl phenyl ether." By A. M. SPIVEY.

" Hafnium alkoxides." By D. C. BRADLEY, R. C. MEHROTRA, and W. WARDLAW.

" Unsaturated fatty acids. Part I. The synthesis of erythrogenic (isanic) and other acetylenic acids." By H. K. BLACK and B. C. L. WEEDON.

" Sequence of reactions in thionyl chloride–hydroxy-compound systems." By W. GERRARD and G. MACHELL.

" 3 : 4-, 3 : 5-, and 3 : 6-Dimethylcatechols." By WILSON BAKER, H. F. BONDY, J. GUMB, and D. MILES.

" The preparation of bis-2-cyanoethyl derivatives of aromatic primary amines, and their conversion into 1 : 6-diketojulolidines. Part II." By JOHN T. BRAUNHOLTZ and FREDERICK G. MANN.

" Kinetics of the association of maleic anhydride and butadiene." By B. EISLER and A. WASSERMANN.

" Cyclic conjugated polyenes. Part V. Some *cyclo*heptatriene derivatives." By J. H. P. VAN AARDT.

" Mechanism, kinetics, and stereochemistry of octahedral substitutions. Part I. Edge-displacement as a hypothesis linking mechanism with stereochemistry of substitution." By D. D. BROWN, C. K. INGOLD, and R. S. NYHOLM.

" Mechanism, kinetics, and stereochemistry of octahedral substitutions. Part II. Kinetics and molecularity of nucleophilic substitutions in the *cis*-dichlorobisethylenediaminecobalt-III ion." By D. D. BROWN and C. K. INGOLD.

" Mechanism, kinetics, and stereochemistry of octahedral substitutions. Part III. Steric course of some unimolecular substitutions in the *cis*-dichlorobisethylenediaminecobalt-III ion." By D. D. BROWN and R. S. NYHOLM.

" Syntheses of polycyclic systems. Part IV. A new route to azulenes." By E. A. BRAUDE and W. F. FORBES.

" The β-phenylserine series. Part II." By ERNST D. BERGMANN, H. BENDAS, and CH. RESNICK.

" Effect of alkyl substitution on absorption spectra." By H. C. BARANY and M. PIANKA.

" The reactions of certain nitrogen-containing compounds derived from benzotrifluoride." By R. A. CARTWRIGHT and J. C. TATLOW.

" Reversible appearance of coloured modifications of some compounds as a result of irradiation at low temperatures." By YEHUDA HIRSHBERG, EPHRAIM H. FREI, and ERNST FISCHER.

" Influence of alkyl groups upon reaction velocities in solution. Part V. The dissociation constants of ketone cyanohydrins in aqueous alcohol." By D. P. EVANS and J. R. YOUNG.

" The influence of alkyl groups upon reaction velocities in solution. Part VI. The acid-catalysed prototropy of dialkyl ketones." By D. P. EVANS and J. R. YOUNG.

" The influence of alkyl groups upon reaction velocities in solution. Part VII. The formation of phenyltrialkylammonium iodides in methyl alcohol." By DAVID P. EVANS.

" Preparation and isomerisation of aromatic ketones and keto-acids." By G. BADDELEY and R. WILLIAMSON.

" Nitramines and nitramides. Part IV. The acid-catalysed decomposition of primary nitramines." By J. BARROTT, I. N. DENTON, and ALEX. H. LAMBERTON.

" The hydrazinium salts of complex fluoro-acids of tin, antimony, and bismuth." By W. PUGH (with a note on optical properties of crystals by H. C. G. VINCENT).

" Colouring matters of the aphididae. Part VIII. Pigments from *Hamamelistes* species." By S. F. MACDONALD.

" Stereochemistry of the tropane alkaloids. Part III. The configuration of scopolamine nd valeroidine." By GÁBOR FODOR and ODÖN KOVÁCS.

ADDITIONS TO THE LIBRARY

I. *Donations*

A. *Books.*

BRITISH SOCIETY FOR THE HISTORY OF SCIENCE. Bulletin. Vol. 1, etc. London 1949 +. (*Reference.*) From the Society.

CONGRESO SUDAMERICANO DE QUIMICA. 5th, 1951. Actas y trabajos. Vol. 1. Lima [1952]. pp. 462. ill. (*Reference.*) From the Secretario-General.

FINDLAY, ALEXANDER. General and inorganic chemistry. London 1953. pp. xvi + 239. ill. Methuen. 8*s*. 6*d*. (*Recd*. 16/1/53.) From the Author.

ILLINOIS UNIVERSITY. Department of Chemistry, 1941—51. Staff, developments, courses and curricula, publications, doctorate degrees. [Urbana 1952.] pp. 151. (*Reference.*) From the Department.

INDIA. *Council of Scientific and Industrial Research. National Chemical Laboratory.* Proceedings of the symposium on Indian oils and fats and their utilization. . . . November, 1951. Edited . . . by J. S. AGGARWAL. Poona [1952]. pp. iii + 266. ill. (*Recd*. 26/1/53.) From the Laboratory.

INSTITUTE OF INSECT CONTROL, JAPAN. Botyu-Kagaku. (Scientific Insect Control.) Vol. 16, No. 2, etc. Kyoto 1951+. [In Japanese with English summaries.] (*Reference.*) From Dr. S. H. Harper.

KYOTO UNIVERSITY. *Institute for Chemical Research.* Bulletin. Vol. 24, etc. Kyoto 1951+. [Partly in Japanese and partly in English.] (*Reference.*) From the Institute.

PEPINSKY, RAY. *Editor.* Computing methods and the phase problem in X-ray crystal analysis. Report of a conference held

. . . April 1950. State College, Pa. 1952. pp. xv + 390. ill. X-ray Crystal Analysis Laboratory, Department of Physics, Pennsylvania State College. **$7.50.** (*Recd.* 13/2/53.)
From the Editor.

ROSE, H. E. The measurement of particle size in very fine powders. Four lectures delivered at King's College, London. London 1953. pp. 127. ill. 9*s*. (*Recd.* 18/2/53.)
From the Publishers : Messrs. Constable & Co., Ltd.

B. *Pamphlets.*

BRITISH PRODUCTIVITY COUNCIL. Heavy chemicals. Report of a productivity team representing the British heavy chemical industry which visited the U.S.A. in 1952. London 1953. pp. xiv + 78. 3*s*. (*Recd.* 16/1/53.)

—— Plastics moulding. Report of a productivity team representing the British plastics moulding industry which visited the U.S.A. in 1952. London 1953. pp. xii + 78. ill. 5*s*. 6*d*. (*Recd.* 12/2/53.)
From the Council.

CEMENT AND CONCRETE ASSOCIATION. Bibliography of cement and concrete. List of books and papers in London libraries, arranged in chronological order. 3rd edition. London 1952. pp. 96. From the Association.

CHRÉTIEN, ANDRÉ. Titres et travaux scientifiques. Nancy 1951. pp. 29.
From the Author.

GEISS, W. Die Filtration von Wein, Süssmost, Schaumwein und Spirituosen. Frankfurt am Main 1952. pp. 78. ill. (Fortschritte in der Kellertechnik, Bd. 2.) Wagner & Söhne. *DM* 2.50. (*Recd.* 9/2/53.)

—— Gezügelte Gärung. Frankfurt am Main 1952. pp. 69. ill. (Fortschritte in der Kellertechnik, Bd. 3.) Wagner & Söhne. *DM* 2.50. (*Recd.* 9/2/53.)
From Mrs. S. M. Tritton.

KEITH, M. L., and SCHAIRER, J. F. The stability field of sapphirine in the system MgO–Al_2O_3–SiO_2. Washington 1952. pp. [6]. ill. (Carnegie Institution of Washington, Geophysical Laboratory Papers, No. 1162.) (From *J. Geol.*, 1952, **60**.)
From the Institution.

KERFOOT, THOMAS, & CO., LTD. Sugars and bacteria. The use of carbohydrates in the study of bacteria and certain closely related micro-organisms and in clinical tests. [Ashton-under-Lyne 1952.] pp. 36.
From the Company.

KOCH, PAUL-AUGUST. Chemische Faserstoffe—ein Überblick über ihre Vielfaltigkeit und ihre Eigenschaften. [St. Gallen 1952.] pp. 26. ill. (From *Textil-Rundschau*, 1952, 7.) From the Society of Chemical Industry.

MADDISON, ROBERT EDWIN WITTON. Hot melt coatings and thermoplastic laminants used in the packaging field. [Stockholm 1952.] pp. 24. ill. (*Svenska Plast Foreningen, Tek. Medd.*, 1952, 7.) From the Author.

MINISTRY OF SUPPLY. *Atomic Energy Research Establishment.* A simple air ejector as a suction motor for dry boxes. By J. R. CATLIN [and others]. Harwell 1952. pp. [11].

—— —— A simple R.F. heat sealing device for thin plastic containers. By W. R. E. MATON. Harwell 1952. pp. [15].

—— —— Radio-isotopes of iron-preparation of solutions of high specific activity. By F. HUDSWELL and K. J. TAYLOR. Harwell 1952. pp. [5].

—— —— The determination, by radioactivation, of arsenic occurring in high purity sulphur used by Isotopes Division. By L. SALMON. Harwell 1952. pp. 3.

—— *Radiochemical Centre.* The measurement of micro-microcurie amounts of radon by a scintillation counting method. By J. BRYANT and M. MICHAELIS. Amersham 1952. pp. [26]. From the Bureau of Abstracts.

NEW ENGLAND INTERSTATE WATER POLLUTION CONTROL COMMISSION. Textile wastes; a review, 1936–50. By M. G. BURFORD, HERBERT F. BERGER, and JOSEPH W. MASSELLI. Boston, Mass. 1950. pp. iii + 29.
From the Hall Laboratory of Chemistry, Wesleyan University, Middletown, Conn.

ROYAL INSTITUTE OF CHEMISTRY. Lectures, Monographs, and Reports, 1952, No. 4. The scientific examination of paintings. By ALFRED EMIL ANTHONY WERNER. London [1952]. pp. 15. ill. [Two copies.]
From the Institute.

ST. ANDREWS UNIVERSITY. ALUMNUS ASSOCIATION. James Colquhoun Irvine, 1877—1952. St. Andrews 1953. pp. 33. ill. (*Alumnus Chronicle*, January 1953, No. 39.)
From Professor Read and the Association.

U.S. *Department of the Interior. Bureau of Mines.* Handbook 5. Boiler-water-treatment manual for federal-plant operators. By LOUIS GOLDMAN. Washington 1951. pp. iv + 94. ill. From the Bureau of Abstracts.

II. *By Purchase*

AMERICAN CHEMICAL SOCIETY. Agricultural applications of petroleum products; a collection of papers . . . Washington, D.C., 1952. pp. v + 104. (Advances in Chemistry Series, No. 7.) The Society. **$4.00.** (*Recd.* 9/2/53.)

BARRETT, CHARLES S. Structure of metals; crystallographic methods, principles and data. 2nd edition. London 1953. pp. xvi + 661. ill. McGraw-Hill. 72*s*. 6*d*. (*Recd.* 24/2/53.)

DAVSON, HUGH, and DANIELLI, JAMES FREDERIC. The permeability of natural membranes. 2nd edition. Cambridge 1952. pp. xii + 365. ill. Cambridge Univ. Pr. 30*s*. (*Recd.* 16/2/53.)

DU VIGNEAUD, VINCENT. A trail of research in sulfur chemistry and metabolism and related fields. Ithaca 1952. pp. xiii + 191. ill. Cornell Univ. Pr. $3.25. (*Recd.* 24/2/53.)

GORE, WILBERT LEE. Statistical methods for chemical experimentation. New York 1952. pp. xi + 210. ill. (Interscience Manuals, 1.) Interscience. $3.50. (*Recd.* 16/2/53.)

HUME-ROTHERY, W., CHRISTIAN, J. W., and PEARSON, W. B. Metallurgical equilibrium diagrams. London 1952. pp. 311. ill. (Physics in Industry Series.) Institute of Physics. 50*s*.

KOLTHOFF, ISAAK MAURITS, and SANDELL, ERNEST B. Textbook of quantitative inorganic analysis. 3rd edition. New York 1952. pp. xii + 759. ill. Macmillan. 30*s*. (*Recd.* 8/1/53.)

KORTÜM, GUSTAV, and BUCHHOLZ-MEISENHEIMER, H. Die Theorie der Destillation und Extraktion von Flüssigkeiten. Berlin 1952. pp. viii + 381. ill. Springer. *DM* 39.60. (*Recd.* 24/2/53.)

KÜHL, HANS. Zement-Chemie. Band 1. Die physikalisch- chemischen Grundlagen der Zement-Chemie. Band 2. Das Wesen und die Herstellung der hydraulischen Bindemittel. Berlin 1952. pp. xvi + 307; xv + 667. ill. Verlag Technik. *DM* 71. (*Recd.* 2/2/53.)

MILLS, MAURICE ROBERT. An introduction to drying oil technology. London 1952. pp. xi + 257. ill. Pergamon Press. 45*s*. (*Recd.* 16/2/53.)

PROGRESS IN THE CHEMISTRY OF FATS AND OTHER LIPIDS. Vol. 1, etc. Edited by R. T. HOLMAN, WALTER O. LUNDBERG, and THOMAS MALKIN. London 1952+. (*Reference.*) 42*s*.

SMITH, ALEXANDER MARTIN. Manures and fertilisers. London 1952. pp. xii + 275. ill. Nelson. 15*s*. (*Recd.* 16/2/53.)

SMITH, D. M. Visual lines for spectroscopic analysis. 2nd edition. London 1952. pp. 102. ill. (*Reference.*) Hilger & Watts. 16*s*.

STATHER, FRITZ. Gerbereichemie und Gerbereitechnologie. 2nd edition. Berlin 1951. pp. xx + 722. ill. Akademie-Verlag. *DM* 58. (*Recd.* 29/12/52.)

U.S.S.R. *Academy of Sciences.* Journal of Applied Chemistry of the U.S.S.R. Vol. 23, etc. New York 1950+. [English translation.] (*Reference.*) Consultants Bureau. $80 *per annum.*

[U.S.] NATIONAL RESEARCH COUNCIL. *Division of Physical Sciences. Committee on Solids.* Imperfections in nearly perfect crystals. Symposium held . . . October, 1950. Edited by W. SHOCKLEY [and others]. New York 1952. pp. xii + 490. ill. Wiley. $7.50. (*Recd.* 16/2/53.)

WORLD METALLURGICAL CONGRESS, 1st, 1951. Proceedings. Edited by WILLIAM MARSH BALDWIN. Cleveland 1952. pp. xv + 835. ill. (*Reference.*) American Society for Metals. 80*s*.

PROCEEDINGS
OF THE
CHEMICAL SOCIETY

SCIENTIFIC MEETINGS DURING JUNE, 1953

LONDON.

Thursday, June 4th, 1953, *at* 7.30 *p.m.*

To commemorate the present-day aspects of the work of Sir William Ramsay (President, 1907—9) :

Introduction by the President.

" The work of Sir William Ramsay in relation to nuclear science and technology." By J. S. Anderson.

" Recent results of researches on the composition of the stratosphere." By F. A. Paneth.

" Modern light sources." By H. G. Jenkins.

" Industrial applications of the rare gases in metallurgy." By L. C. Bannister.

" The use of helium in diving." By H. J. Taylor.

OFFICIAL ANNOUNCEMENTS

DEATHS.

The Council regrets to announce the deaths of the following Fellows:

	Elected.	Died.
Thomas Stewart Brechin (Edinburgh)	Feb. 20th, 1930.	Sept. 1952.
Norman Couch (Liverpool)	Jan. 18th, 1945.	Feb. 26th, 1953.
Frank Cropper (Ashton-under-Lyne)	June 19th, 1941.	1952.
Edward Lionel Joseph (Rochester)	June 15th, 1911.	Feb. 24th, 1953.
Harold Lamb (Rotherham)	Feb. 17th, 1921.	May 8th, 1952.
Frederick Wilson Moulds (Nottingham)	May 7th, 1925.	April 1952.
Maurice James Rose (Wrexham)	Jan. 20th, 1944.	Dec. 1952.

CONGRATULATIONS.

The President has conveyed the congratulations of the Society to the following Fellows who were elected Fellows of the Royal Society on March 19th, 1953:

John Stuart Anderson (Abingdon).
John Warcup Cornforth (London).
Alan Richard Powell (Amersham).
Herbert Marcus Powell (Oxford).
Thomas Wallace (Bristol).

ELECTION OF NEW FELLOWS.

The following 117 Candidates were elected Fellows of the Society on March 19th, 1953:

John Acton.
Peter Richard Aeschbach.
Philip Akroyd.
Wilfred Louis Florio Armarego.
Maurice Raymond Atkinson.
James Beattie Auld.
Bryan William Baker.
Edward Herbert Baker.
Gordon Alfred Barclay.
Ernest Bassous.
Lawrence Benjamin.
Jerome A. Berson.
Hermann Block.
Jordan Jay Bloomfield.
Newman Mayer Bortnick.
Rodney Bowen.
Albert Bowers.
Harold Edwin Brookes.
David Arthur Brown.
Donald Houston Brown.
Robert James Butcher.
David Calvert.
Concetto Thomas Camilli.
William Duncan Campbell.
James H. Canfield.
John Herbert Carter.
Patricia Joan Caulfield.
Peter Chaplen.
Dennis Alwyn Conyers.
Edward Ingram Cooke.
George Forrest Davidson.
David Tudwal Davies.
Israel A. David.
John Eadie.
Ronald Walter Fawcett.
Alfred James Feuell.
Geoffrey Alan Fletcher.
Derek Guthrie Forbes.
Matthew Hamilton Fraser.
Christopher John French.
Sheila Wendy Gates.
Joseph Daniel Gettler.
John Robert Gibbs.
Douglas Martin Gilbey.
Edwin S. Gould.
Kenneth Peter Geoffrey Greenwood.
Paul D. Hance.
Denis Geoffrey Hardy.
Gordon Scott Harris.
Robert Heggie.
James Blake Hickman.
Robert John Highet.
Yehuda Hirshberg.
Zen-ichi Horii.
Edward Graham Hughes.
David Michael Hunt.
Roger John Irving.
Issa Mustafa Ibrahim Issa.
Thomas L. Jacobs.
Gordon Robert Johnston.
Derry Wynn Jones.
Tetsuji Kametani.
James Charles Kauer.
Edwin Frank Kemp.
Norman Kharasch.
Stanley Kirschner.
Robert Albert Kloss.
Walter Henry Knoth.
Hiroshi Kugita.
Yutaka Kuwada.
Peter Lim.
John Kenneth Linacre.
George Bond Lucas.
Nydia Luthy.
Keith Robert Leonard Mansford.
Gianlorenzo Marino.
James Edward Masterson.
Leslie Ernest Medlock.

Pandelis D. Michail.
Ronald Barron Mooney.
Hirokazu Morita.
Ichiro Moritani.
Robert Thornton Morrison.
William F. O'Connor.
James Ogg.
Kentaro Okumura.
Gene Leech Oliver.
Diarmuid Thomas O'Rourke.
Edward Anthony Parkes.
Seymour Herbert Pomerantz.
George Rennet Proctor.
Frank Norman Reckless.
Albert Edward Richards.
Meirion Wyn Roberts.
Arthur John Rostron.
David George Saunders.
Robert Saxon.
Reginald Smart.
Robert Carl Springborn.
Derek James Stanbank.
Edgar Alfred Steck.
Robert John Stedman.
Ronald Swidler.
Tsunematsu Takemoto.
Kazuo Horace Takemura.
Yasumitsu Tamura.
Hyozo Taniyama.
Owen Harcourt Waller.
Wolfgang Ferdinand Walter.
Colin Clement Ware.
Owen Wright Webster.
Raymond Alban Whitcombe.
David Crowe Whitmore.
Arthur Michael Widgery.
Wayne Keith Wilmarth.
Robert Arthur Lawrence Wilson.
Melville Lawrence Wolfrom.

ACKNOWLEDGMENTS.

Acknowledgment is made of a gift of the Society's publications from Mr. R. Brown.

ENDOWED LECTURES 1953—1954.

The following Fellows have accepted invitations to deliver Endowed Lectures as indicated:

Liversidge Lecture	Professor H. J. Emeléus.
Tilden Lectures	Dr. J. S. Anderson
	Dr. A. W. Johnson.
Centenary Lectures	Dr. R. H. F. Manske.
	Professor A. Tiselius.

HARRISON MEMORIAL PRIZE.

In accordance with the Trust Deed governing the Harrison Memorial Fund, the Selection Committee, consisting of the Presidents of the Chemical Society, the Royal Institute of Chemistry, the Society of Chemical Industry, and the Pharmaceutical Society. will make an award of the Harrison Memorial Prize in December 1953, subject to the condition that the Selection Committee shall be of opinion that there is a candidate of sufficient distinction to warrant an award of the Prize.

The Prize, not exceeding 100 Guineas, will be awarded to the chemist of either sex, being a natural-born British subject and not at the time over thirty years of age, who, in the opinion of the Selection Committee, shall during the previous five years, have conducted the most meritorious and promising original investigations in Chemistry and published the results of those investigations in a scientific periodical or periodicals.

Applications, five copies of which must be submitted, should give the name of the applicant (in full); age (birth certificate should accompany the application); degrees (with name of University); any other qualifications and experience; titles of published papers (with co-authors names) including full references to publication; where research was carried out; testimonials and references; and any other particulars bearing on the application.

The Selection Committee is prepared to consider applications, nominations, or information as to candidates eligible for the Prize. Any such communication must be received by the President, The Chemical Society, Burlington House, Piccadilly, London, W.1, not later than Tuesday, December 1st, 1953. Candidates must not have attained the age of thirty years at this date.

MINUTES OF SCIENTIFIC MEETINGS

Minutes of a

SCIENTIFIC MEETING

held at the University of Aberdeen on March 12th, 1953, at 2.30 p.m.

PROFESSOR E. L. HIRST, D.Sc., LL.D., F.R.S., Vice-President, was in the Chair, and in expressing his pleasure in presiding at a Scientific Meeting at Aberdeen, conveyed the apologies of the President who was unable to attend.

FORMAL ADMISSION OF FELLOWS.

The following were admitted Fellows of the Society: M. B. Watson, W. E. Addison, K. W. Bentley, G. L. Kington, G. R. Proctor, L. V. C. Rees, S. Davidson, A. J. S. Sorrie, J. Y. Cooper, R. H. Thomson.

PEDLER LECTURE.

The Chairman called upon Professor R. P. Linstead, C.B.E., D.Sc., F.R.S., to deliver his Pedler Lecture entitled "Discoveries among Conjugated Macrocyclic Compounds." At the conclusion of the lecture, a vote of thanks to Professor Linstead, proposed by Professor W. O. Kermack, was carried with acclamation.

Minutes of a

SCIENTIFIC MEETING

held at Burlington House on March 19th, 1953, at 7.30 p.m.

The President, PROFESSOR C. K. INGOLD, D.Sc., F.R.S., was in the Chair.

MINUTES.

The Minutes of the Scientific Meetings held at Burlington House on February 5th and at the University of Aberdeen on March 12th were read, and were confirmed and signed.

VACANCIES ON COUNCIL 1953—1954.

The list of nominations was read.

APPOINTMENT OF SCRUTATORS.

Mr. A. Maccoll and Mr. P. F. G. Praill were appointed Scrutators for the ballot for the election of a Vice-President and Ordinary Members of Council.

FORMAL ADMISSION OF FELLOWS.

The following were admitted Fellows of the Society: T. Brock, A. W. Westrup, D. G. Crowter, M. Bassey, D. G. Michael, R. C. Isherwood, O. J. Elphick, R. Presser, W. G. Cobbett, M. Everett, P. A. T. Swoboda, A. W. Burgstahler, D. I. Prichard.

NERNST MEMORIAL LECTURE.

The President called upon Professor J. R. Partington, M.B.E., D.Sc., to deliver the Nernst Memorial Lecture. At the conclusion of the lecture, a vote of thanks to the Lecturer, proposed by the President, was carried with acclamation.

Minutes of a

SCIENTIFIC MEETING

held in the Lecture Theatre, The Royal Institution, Albemarle Street, W.1, on March 26th, 1953, at 11 a.m.

The President, PROFESSOR C. K. INGOLD, D.Sc., F.R.S., was in the Chair.

MINUTES.

The Minutes of the Scientific Meeting held at Burlington House on March 19th, 1953, were read, and were confirmed and signed.

FORMAL ADMISSION OF FELLOWS.

The following were admitted Fellows of the Society: V. Prelog, F. K. Drayson, H. Wood, G. C. Gibbons, R. J. Nunn, S. Thorburn, S. Pickholz, E. J. Smith, J. Collins, F. Micheel, F. Weygand, A. C. Mason, J. A. Beesley, G. Fuller, P. M. Maitlis, A. M. Goodall, A. J. Beckwith, M. A. Davis, R. A. Saunders, I. F. Ferguson, G. A. Morrison.

FARADAY LECTURE.

The President called upon Sir Cyril Hinshelwood, M.A., D.Sc., F.R.S., to deliver his Faraday Lecture entitled, "Autosynthesis." At the conclusion of the lecture, the President presented the Lecturer with the Faraday Medal, and proposed a vote of thanks, which was carried with acclamation.

LIST OF APPLICATIONS FOR FELLOWSHIP

(*Fellows wishing to lodge objection to the election of these candidates should communicate with the Honorary Secretaries within ten days of the date of publication of the* Journal *for April, 1953. Such objections will be treated as confidential. The forms of application are available in the Library.*)

***Albinson, Brian.** British. 3, Bowdon Street, Edgeley, Stockport. Student at Royal Technical College, Salford. *Signed by:* E. S. Edwards, K. S. W. Sing, A. V. Mercer, W. P. Thistlethwaite.

Antonis, Arnold, B.Sc. (Rand), Ph.D. (Cape Town), A.R.I.C. South African. Ascot Road, Kenilworth, Cape Town, South Africa. Assistant Lecturer at University of Cape Town. *Signed by:* W. Pryde, A. M. Stephen, M. Peisach.

***Austin, William Charles,** B.Sc. (Lond). British. Garden Cottage, Downham, Hatfield Heath, Bishops Stortford. Research Chemist. *Signed by:* M. D. Potter, E. P. Taylor, J. H. Hunt.

***Backderf, Richard Harold,** B.Sc. (Akron), M.A. (Ohio). American. Department of Physiological Chemistry, The Ohio State University, Columbus, Ohio, U.S.A. Fellow of the Institute of Nutrition and Food Tech. *Signed by:* K. E. Kolb, C. L. Wilson, M. S. Newman.

***Bailey, Brian,** B.Sc. (Sheffield). British. Bricklayers Arms, Low Valley, Wombwell, Nr. Barnsley. Research worker at Sheffield University. *Signed by:* A. H. Lamberton, W. D. Walsh, H. K. Pindred.

***Bailey, Donald Norman,** B.Sc. (Leeds), A.R.I.C. British. 19, Avondale Road, Shipley, Yorks. Research Student at Leeds University. *Signed by:* J. W. Baker, P. A. Briscoe, W. A. Wightman, T. G. Heggs.

***Barratt, Donald Roy,** B.Sc. (Lond). British. 51, Fleming Avenue, Leigh-on-Sea, Essex. *Signed by:* R. V. Foster, J. Kenyon, L. W. F. Salome.

Barry, William James, B.Sc. and Ph.D. (Lond.). British. 19, Muswell Hill Road, London, N.10. Lecturer in Organic Chemistry at Northern Polytechnic. *Signed by:* H. J. S. King, I. L. Finar, C. G. Smith.

***Bartlett, Brian Edward,** B.Sc. (Reading). British. 12, Baydon Drive, Reading. Student. *Signed by:* J. E. Prue, C. L. Leese, D. R. Maxted.

Beale, Edward Worthy, A.R.I.C. British. 4, Wandle Side, Wallington, Surrey. Experimental Officer, Ministry of Supply. *Signed by:* K. M. Jackson (Miss), C. C. Washbrook, E. V. Reid.

***Bell, Stephen William.** British. 33, Wheatclose Road, Barrow-in-Furness. Student at Sheffield University. *Signed by:* A. H. Lamberton, T. S. Stevens, P. A. H. Wyatt.

Bliss, William John. British. 13, Aubrey Road, Northbridge, N.S.W., Australia. Works Chemist at William Cooper and Nephews (Australia) Pty. Ltd. *Signed by:* R. S. Nyholm, L. N. Short, G. W. K. Cavill.

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PAPERS RECEIVED

(List of papers received between February 24th and March 27th, 1953.)

" The alleged ' carbazoacridines.' " By R. M. ACHESON and B. F. SANSOM.

" The measurement of optical rotatory dispersion." By M. K. HARGREAVES.

" The optical rotatory dispersion of (+)-octan-2-ol." By M. K. HARGREAVES.

" Triterpenoids. Part XII. The lanosterol analogue of provitamin D_3." By D. H. R. BARTON and B. R. THOMAS.

" Magnetic susceptibility measured by the Gouy method with fixed specimen position." By O. M. HILAL and G. E. FREDERICKS.

" The application of the Arndt–Eistert reaction to halogenated aliphatic acids." By F. BROWN and W. K. R. MUSGRAVE.

" Interaction of phosphorus trichloride with alcohols and with hydroxy-esters." By W. GERRARD, M. J. D. ISAACS, G. MACHELL, K. B. SMITH, and P. L. WYVILL.

" Studies in the steroid group. Part LIX. Preparation and reactions of 5α : 8α-epoxy-$\Delta^{9(11)}$-steroids." By R. B. CLAYTON, A. CRAWSHAW, H. B. HENBEST, E. R. H. JONES, (MISS) B. J. LOVELL, and GEOFFREY W. WOOD.

" Studies in the steroid group. Part LX. Reduction of ergosterol epidioxide." By R. B. CLAYTON, H. B. HENBEST, and E. R. H. JONES.

" The preparation and dehydration of 2-methyl-6-phenylheptan-3-ol." By D. H. HEY, JOHN HONEYMAN, D. H. KOHN, and W. J. PEAL.

" An alkaloid of *Dioscorea hispida*, Dennstedt. Part II. Hofmann degradation." By A. R. PINDER.

" Cyanamides. Part VI. Sulphonyl derivatives related to dicyandiamide and melamine." By FREDERICK KURZER and J. ROY POWELL.

" Reactions in fused aluminium chloride–sodium chloride." By D. B. BRUCE, A. J. S. SORRIE, and R. H. THOMSON.

" Studies of *N*-halogeno-compounds. Part IV. The reaction between ammonia and chlorine in aqueous solution, and the hydrolysis constants of chloroamines." By R. E. CORBETT, W. S. METCALF, and F. G. SOPER.

" The solvolytic reactions of 2 : 2-dimethyl-1-phenylpropyl bromide." By I. DOSTROVSKY and D. H. SAMUEL.

" Structural chemistry of the alkoxides. Part IV. Normal alkoxides of silicon, titanium, and zirconium." By D. C. BRADLEY, R. C. MEHROTRA, J. D. SWANWICK, and W. WARDLAW.

" The isolation of 2′ : 4 : 4′-trihydroxychalkone from yellow varieties of *Dahlia variabilis*." By E. C. BATE-SMITH and T. SWAIN.

" The polysaccharide of *Penicillium islandicum* Sopp." By J. BADDILEY, J. G. BUCHANAN, and E. M. THAIN.

" The relation between configuration and conjugation in diphenyl derivatives. Part II. The dipole moments of the monohalogeno- and mononitro-diphenyls." By A. C. LITTLEJOHN and J. W. SMITH.

" Studies on the behaviour of halides of the transition metals with ammonia. Part II. The reaction of titanium tetrachloride with ammonia." By G. W. A. FOWLES and F. H. POLLARD.

" Formation of sulphites, phosphites, and phosphates of alcohols containing an aryl group." By W. GERRARD and B. D. SHEPHERD.

" Constituents of *Filix mas*. Part III. Albaspidin." By A. MCGOOKIN, ALEXANDER ROBERTSON, and T. H. SIMPSON.

" The chemistry of fungi. Part XVII. Dehydroburicoic acid." By R. M. GASCOIGNE, ALEXANDER ROBERTSON, and J. J. H. SIMES.

" Determination of electrokinetic charge and potential by the sedimentation method. Part V. Silica in some aqueous nitrate solutions." By C. I. DULIN and G. A. H. ELTON.

" The synthesis of long-chain αω-dihalides by use of acetylenic compounds." By A. W. NINEHAM.

" Studies in the polyene series. Part XLIX. Acetylenic alcohols from methoxyacetone and their conversion into unsaturated aldehydes." By RASHID AHMAD and B. C. L. WEEDON.

" The acid catalysed hydrolysis of benzoyl fluoride." By C. W. L. BEVAN and R. F. HUDSON.

" The heat treatment of bisdiphenylene-ethylene." By R. J. S. JENNINGS and A. FOWLER-WILLIAMS.

" Studies on the organic chemistry of phosphorus. Part I. Some new methods for the preparation of alkyl halides." By S. R. LANDAUER and H. N. RYDON.
" The conductivity of potassium chloride in mixed solvents." By J. DALY and C. G. SMITH.
" Steroids. Part XLVI. Synthesis of 11β-hydroxytestosterone and of 11-keto-testosterone." By O. MANCERA, G. ROSENKRANZ, and F. SONDHEIMER.
" Trimethylgallium. Part II. Reactions with hydroxy- and related compounds." By G. E. COATES and R. G. HAYTER.
" The vapour pressure and improved preparation of methylselenol." By G. E. COATES.
" The Hofmann reaction with α- and β-hydroxy-amides. Reactions of the intermediate *iso*cyanates." By C. L. ARCUS and D. B. GREENWOOD.
" The saponins. Part III. The glycosidic nature of dioscin and yamonin." By PETER A. S. CANHAM and FRANK L. WARREN.
" The *Euphorbia* resins. Part IX. The structure of euphorbol." By J. B. BARBOUR, MARGARET M. DUNCAN, E. C. LEISEGANG, A. J. ROUSSOUW, and F. L. WARREN.
" The *Euphorbia* resins. Part X. The structure of rings A, B, and C, of tirucallol." By J. B. BARBOUR, MARGARET M. DUNCAN, E. C. LEISEGANG, A. J. ROUSSOUW, and F. L. WARREN.
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" Infra-red absorptions of vinyl and *iso*propenyl groups in polar compounds." By W. H. T. DAVISON and (in part) G. R. BATES.
" Some 6-alkyl-5-amino- and 7-alkyl-8-amino-quinolines." By R. LONG and K. SCHOFIELD.
" The spatial configuration of the isomeric forms of 1 : 3-dimethyl*cyclo*pentane." By S. F. BIRCH and R. A. DEAN.
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" *Digitalis* glucosides. Part VII. The structure of the *Digitalis* anhydrogenins and the orientation of the hydroxy-groups in digoxigenin and gitoxigenin." By H. M. E. CARDWELL and SYDNEY SMITH.
" Application of molecular-orbital theory to some binuclear co-ordination compounds." By J. D. DUNITZ and L. E. ORGEL.
" Chemistry of the *Coprosma* genus. Part VII. A revised constitution for lucidin." By LINDSAY H. BRIGGS and G. A. NICHOLLS.
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" Protozoal polysaccharides. Structure of the polysaccharide produced by the holotrich giliates present in sheep's rumen." By G. FORSYTH and E. L. HIRST.

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" The nature of the co-ordinate link. Part VIII. Geometrical isomerism and simple reactions of ethanethiol bridged complexes of platinum(II) and of palladium(II)." By J. CHATT and F. A. HART.

" Studies in spectroscopy. Part IV. The infra-red and ultra-violet spectra of some aliphatic nitro-compounds." By R. N. HASZELDINE.

" Studies in spectroscopy. Part V. Molecular-compound formation with polyhalogeno-iodo-compounds." By R. N. HASZELDINE.

" Alkaloids of *Glycosmis arborea*. Part I." By R. N. CHAKRAVARTI and S. C. CHAKRAVARTI.

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" Organometallic and organometalloidal fluorine compounds. Part VIII. The electrochemical fluorination of dimethyl sulphide and carbon disulphide." By A. F. CLIFFORD, H. K. EL-SHAMY, H. J. EMELÉUS, and R. N. HASZELDINE.

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" Partition coefficients and basic strengths of some diphenyl derivatives." By J. CYMERMAN-CRAIG, (MISS) M. J. PARKER, and (MISS) P. WOODHOUSE.

" Triterpenoids. Part XIII. Phyllanthol, the first hexacarbocyclic triterpenoid." By D. H. R. BARTON and P. DE MAYO.

" Studies with boron trichloride and organic sulphides. Part I. The preparation and properties of di-*n*-butyl sulphide–boron trichloride." By M. F. LAPPERT.

" The formation of phenoxyacetic acids from alkoxybenzenes and diazoacetic ester." By A. W. JOHNSON, A. LANGEMANN, and J. MURRAY.

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AMERICAN CHEMICAL SOCIETY. *Cleveland Section.* Isotopics. Vol. 29, etc. Cleveland 1953+. (*Reference.*) From the Section.

ASSOCIATION OF BRITISH CHEMICAL MANUFACTURERS. Conference on chemical works safety, 4th, Buxton, 2nd–4th May, 1952. Proceedings. London [1952]. pp. iii + 193. ill. (*Reference.*) From the Association.

BARNETT, EDWARD DE BARRY, and WILSON, CECIL LEEBURN. Inorganic chemistry. A text-book for advanced students. London 1953. pp. xiv + 512. ill. (*Reference.*) 35*s.* From the Publishers: Messrs. Longmans Green & Co.

BRITISH PLASTICS YEAR BOOK, 1953. A classified guide to the plastics industry. 23rd edition. London [1953]. pp. 560. (*Reference.*) 30*s.* From the Publishers: Messrs. Iliffe & Sons, Ltd.

CHIMIYA. Vols. 1—2. Prague 1951—52. [In Russian.] From Professor J. Heyrovsky.

INSTITUTION OF THE RUBBER INDUSTRY. History of the rubber industry. Edited by P. SCHIDROWITZ and T. R. DAWSON. Cambridge 1952. pp. xxiv + 406. ill. Heffer. 30*s.* (*Recd.* 3/3/53.) From the Institution.

INTERNATIONAL CONGRESS ON ANALYTICAL CHEMISTRY. Oxford, 1952. Proceedings. Cambridge [1953]. pp. xii + 493. ill. (From *Analyst*, 1952, **77**.) (*Recd.* 23/3/53.) From the Publishers: W. Heffer & Sons, Ltd.

MACDOUGALL, FRANK H. Physical chemistry. 3rd edition. New York 1952. pp. ix + 750. ill. 45*s.* (*Recd.* 26/2/53.) From the Publishers: The Macmillan Co.

MOND NICKEL CO., LTD. Transformation characteristics of nickel steels. Revised edition. London 1952. pp. 73. ill. (*Recd.* 23/3/53.) From the Director.

PERCIVAL, EDMUND GEORGE VINCENT. Structural carbohydrate chemistry. Reprinted with supplementary references by ELIZABETH PERCIVAL. London 1953. pp. viii + 248. 25*s.* (*Recd.* 12/3/53.) From the Publishers: Messrs. J. Garnet Miller, Ltd.

II. *By Purchase*

BRITISH PHARMACOPŒIA, 1953. Published under the direction of the General Medical Council pursuant to the Medical Council Act, 1862, and the Medical Act, 1950. London [1953]. pp. xxiv + 894. ill. (*Reference.*) Pharmaceutical Press. 50*s.*

FLETT, LAWRENCE H., and GARDNER, WILLIAM HOWLETT. Maleic anhydride derivatives. Reactions of the double bond. New York 1952. pp. x + 269. Wiley. $6.50. (*Recd.* 26/2/53.)

GOLDBERG, MORRIS. Spanish–English chemical and medical dictionary. New York 1952. pp. xiii + 609. (*Reference.*) McGraw-Hill. $17.50.

GRAY, CHARLES HORACE. The bile pigments. London 1953. pp. xv + 142. ill. (Methuen's Monographs on Biochemical Subjects.) Methuen. 9*s.* 6*d.* (*Recd.* 14/3/53.)

HALLA, FRITZ. Kristallchemie und Kristallphysik metallischer Werkstoffe. 2nd edition. Leipzig 1951. pp. xvi + 638. ill. Barth. *DM* 45. (*Recd.* 26/2/53.)

MEDICAL RESEARCH COUNCIL. Memorandum No. 22. Industrial fluorosis; a study of the hazard to man and animals near Fort William, Scotland. A report to the Fluorosis Committee. . . . London 1949. pp. viii + 131. ill. H.M.S.O. 4*s.* (*Recd.* 5/3/53.)

PRANDTL, WILHELM. Die Geschichte des chemischen Laboratoriums der Bayerischen Akademie der Wissenschaften in München. Weinheim 1952. pp. iv + 141. ill. Verlag Chemie. *DM* 17. (*Recd.* 19/3/53.)

PYLER, E. J. Baking science and technology. 2 vols. Chicago 1952. pp. xvii; x + 801. ill. Seibel Publishing. $15. (*Recd.* 26/2/53.)

WISE, LOUIS E., and JAHN, EDWIN CORNELIUS. *Editors.* Wood chemistry. 2nd edition. 2 vols. New York 1952. pp. vii; ix + 1343. ill. (American Chemical Society Monograph Series.) Reinhold. $30. (*Recd.* 26/2/53.)

PROCEEDINGS

OF THE

CHEMICAL SOCIETY

OFFICIAL ANNOUNCEMENTS

DEATHS.

The Council regrets to announce the deaths of the following Fellows :

	Elected.	Died.
George Eric Forstner (Watford)	April 24th, 1941.	Feb. 1953.
Francis William Lewis (London, E.17)	Sept. 17th, 1942.	March 15th, 1953.
James William McBain (California)	Feb. 16th, 1911.	March 12th, 1953.
Walter Thorp (Dublin).....	Dec. 3rd, 1891.	March 19th, 1953.
David John Williams (Bath)	Feb. 18th, 1903.	Feb. 11th, 1953.

CONGRATULATIONS.

The President has conveyed the congratulations of the Society to the following Fellows who completed 60 years of Fellowship on May 4th, 1953 :

Julian Levett Baker (Maidenhead).
George Rudd Thompson (Newport).

and to the following, who completed 50 years of Fellowship on April 22nd, 1953 :

Percy Edgerton (S.W. 13).
Arthur Ernest Pitt (Chigwell).
Henry Edward Stevenson (Epsom).

ELECTION OF NEW FELLOWS.

The following 222 Candidates were elected Fellows of the Society on May 7th, 1953 :

Brian Albinson.
Arnold Antonis.
William Charles Austin.
Richard Harold Backderf.
Brian Bailey.
Donald Norman Bailey.
Donald Roy Barratt.
William James Barry.
Brian Edward Bartlett.
Edward Worthy Beale.
Camille Edouard Alphonse Beaudet.
Stephen William Bell.
William John Bliss.
John Edward Bloor.
Avrom Aaron Blumberg.
Derek Ernest Bond.
Gerald Robert Boreham.
Gordon Edgar Bradley.
John Raymond Brayford.
Desmond Brennan.
Ronald Charles David Breslow.
Ronald Petter Buckley.
Ian Harvey Burnett.
John Roe Brown Campbell.
Dewey Carpenter.
Henry Thomas Joseph Chilton.
Leon Stanley Ciereszko.
Arthur Maurice Clark.
Raymond Brazener Clayton.
Saul G. Cohen.
Alec Collier.
Gerald Charles Winstone Comley.
Henry Alfred Cook.
Terence Granville Corbin.
Derek Edgar Charles Corbridge.
John William Corcoran.
Thomas Edward Couling.
Arthur Kenneth Covington.
Kenneth Crudge.
Kenneth George Crush.
Ernest Csendes.
Hans Ulrich Daeniker.
Harry Thomas Daniel.
Dennis Norman Davies.
Lionel Leslie Frederick Deadman.
Frederick Brian Deans.
Benjamin De Gorter.
Martin J. Diamond.
John David Dickinson.
David Dollimore.
Paul Denis Donovan.
Alan Yule Drummond.

Brian Gordon Dutton.
John Robert Dyer.
Leslie Ian Kerr Ebbutt.
Brian Clifford Eggleston.
Arvid Ek.
Irvin Wesley Elliott.
Albert James Ellis.
Philip Dukes Farrell.
Melvin Fields.
Royston Herbert Filby.
Calvin Martin Foltz.
Herbert James Fortune.
Richard Cuneo Fox.
Robert Jack Fox.
Iain Andrew Mackay Fraser.
Stanley James Gardiner.
Robert George Gardner.
Charles John Geach.
Giordano Giacomello.
Ronald Basil Girdler.
Bernard Fenwick Gofton.
Gordon Allison Grant.
June Clare Griffith.
James Grigor.
Peter David Groves.
Edward Vahe Gulbenkian.
Rameshwar Dayal Gupta.
John Hannah.
Patrick J. Haran.
Clive Melville Harris.
Roy Graham Hayter.
Carla Heitner.
Thomas Hewitt.
Patricia Joan Hextall.
Richard Thomas Holden.
Eric Howard Holdsworth.
Wei-Yuan Huang.
John Hudec.
Alan Frederick Hulme.
Brian Hulme.
Kathleen Margaret Humphreys.
Zdenek Hybs.
George Everett Inglett.
John Jackson.
Renee Hermine Jaeger.
Anthony Noel James.
Reginald Frank Jameson.
Graham Archibald Jamieson.
Robert Stuart Pilling Jamieson.
Kenneth John Jarrett.
Roger W. Jeanloz.
Alan Johnson.
Keith David Bebb Johnson.
David Herbert Jowett.
Mumtaz Ali Kazi.
Hans Kleinfeller.
Koichi Kometani.
Walter Kynaston.
Herbert Landesman.
Elizabeth E. Lee.
Peter Andrew Lemin.
Laurence Anthony Leonard.
K. Linderstrøm-Lang.
Charles Peter Lloyd-Jones.
William Herbert Lowden.
Leonard Lowes.
Neil Charles Macdonald.
William Arthur Thomas Macey.
John Daniel Macfarlane.
Robert Alexander Marshall Mackinnon.
Gilbert Joseph Mains.
Peter James Malden.
Gerald Samuel Marks.
Richard Louis Markus.
Peter Robert Marshall.
Robin Derek Marshall.
James Geoffrey Marsland.
Frank Marson.
John Mather.
Kenneth Jack Matterson.
Robert Percy Miller.
Leon Sherwood Minckler.
John Barnett Oswald Muckersie.
Norbert Muller.
Luigi Musajo.
Wilfred Samuel Nathan.
Harry J. Neumiller.
John T. Nolan.
Ronald Alan Nunn.
Denis Finbar O'Callaghan.
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Malcolm Donald Ogden.
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Abdul Waheed.
Hartz Gunter von Waldeyer.
Ernest Albert Walker.
Peter Walker.
James Wallace.
Edward Lockwood Wheeler.
Vera Williamson.
William Robert Nigel Williamson.
Oscar Michael Windrath.
George Frederick Wood.
John Luker Wood.
Robert Burns Woodward.
John Hubert Wright.
Victor Barry Wright.
Percival Leslie Wyvill.
Derek Malcolm Verney Young.

ACKNOWLEDGMENTS.

Acknowledgment is made of gifts of the Society's publications from Mr. G. C. L. Griffin, Dr. H. Henstock, Mr. T. F. McCombie, Mr. A. P. Mieras, Mr. W. B. Saville, and Mr. W. B. Whitham.

COMMITTEES 1953—54.

The thanks of the Council have been conveyed to the retiring Members of Committees for the services they have rendered to the Society. The following have been appointed for 1953—54 :

Finance and General Purposes Committee.

Professor J. W. Cook, Sir Harry Jephcott, Dr. J. Kenyon, Sir Eric Rideal, Dr. F. A. Robinson, Mr. Stanley Robson, Mr. J. D. Rose, Professor A. R. Todd, together with the Officers, the Chairman of the Publication Committee, and the Representative of the Joint Library Committee on the Council of the Chemical Society, with the President as Chairman, Treasurer as Vice-Chairman, and the General Secretary as Secretary.

Research Fund Committee.

Professor C. E. H. Bawn, Professor J. W. Cook, Professor J. H. Emeléus, Professor E. R. H. Jones, Professor R. P. Linstead, Professor H. W. Melville, Sir Eric Rideal, Dr. R. Spence, Professor E. E. Turner, together with the Officers, with the President as Chairman, and the General Secretary as Secretary.

Publication Committee.

Sir Cyril Hinshelwood (Chairman), Dr. J. S. Anderson, Dr. D. H. R. Barton, Professor C. E. H. Bawn, Dr. D. J. Bell, Mr. R. P. Bell, Dr. E. J. Bowen, Dr. A. H. Cook, Professor C. A. Coulson, Professor F. S. Dainton, Professor C. W. Davies, Professor H. J. Emeléus, Dr. F. Fairbrother, Professor R. D. Haworth, Dr. H. R. Ing, Dr. H. M. N. H. Irving, Dr. F. G. Mann, Professor R. A. Morton, Dr. L. N. Owen, Professor J. M. Robertson, Professor H. N. Rydon, Dr. N. Sheppard, Professor C. W. Shoppee, Dr. W. F. Short, Dr. R. Spence, Professor M. Stacey, Dr. J. Walker, Dr. W. A. Waters, Professor T. S. Wheeler, and the Officers, with the Editor as Secretary.

Corday–Morgan Medal and Prize Selection Committee.

The President (Chairman), the immediate Past-President (Sir Eric Rideal), and the six Vice-Presidents, who have not filled the Office of President, with the General Secretary as Secretary.

JOURNAL—PUBLICATION OF PAPERS AFTER PRELIMINARY PUBLICATION.

The Publication Committee has given consideration to the amount of detail which should be reported in papers dealing with matters which have previously been the subject of a preliminary communication (*e.g.*, a letter to the Editor of another periodical). It was decided that papers in the *Journal* should be complete scientific publications, and that any essential duplication thereby involved should be tolerated. However, it was noted that if an author gave almost complete detail in preliminary communications the subsequent paper might become ineligible for publication in the *Journal*, on the grounds that a communication with essentially the same scientific content had already appeared in another *Journal*.

LIBRARY.

From July 16th until September 30th, 1953, the Library will be open from 10 a.m. to 5 p.m. daily, except during the fortnight August 3rd to 15th inclusive, when it will be closed for revision and cleaning.

VAN'T HOFF FUND.

The Committee of the Van't Hoff Fund for the endowment of investigations in the field of pure and applied chemistry invites applications for grants from the fund.

The amount available for 1954 is about 1300 Dutch guilders, and applications should be sent by registered post to Het Bestuur der Koninklijke Nederlandse Academie voor Wetenscheppen, bestemd voor de Commissie van het "Van't Hoff Fonds," Trippenhuis, Kloveniersburgwal 29, Amsterdam, before November 1st, 1953. Applicants must state the amount of the grant desired and the purpose for which it is required.

LIST OF APPLICATIONS FOR FELLOWSHIP

(*Fellows wishing to lodge objection to the election of these candidates should communicate with the Honorary Secretaries within ten days of the date of publication of the* Journal *for May*, 1953. *Such objections will be treated as confidential. The forms of application are available in the Library.*)

Allen, Charles F. H., M.A. and Sc.D. (Boston), M.A. and Ph.D. (Harvard), Sc.D. (McGill). American. Research Laboratories, 129, Kodak Park Works, Eastman Kodak Co., Rochester, New York, U.S.A. Assistant Superintendent, Organic and Polymer Chemistry Department. *Signed by:* C. E. K. Mees, L. G. S. Brooker, W. O. Kenyon.

Arnold, Richard Thomas, Ph.D. (Illinois). American. Office of the United States High Commissioner for Germany, Box 100, Mehlem (Bonn), Germany. Science Adviser. *Signed by:* A. R. Todd, G. W. Kenner, A. W. Johnson.

***Barrass, Bryan Conway.** British. 18, Swallows Yard, Greenhead Lane, Chapeltown, Nr. Sheffield. Student of Sheffield University. *Signed by:* A. H. Lamberton, T. S. Stevens, J. McKenna.

***Bass, Raymond Leslie,** B.Sc. (Lond.), A.R.I.C. British. 146, Holwell Road, Welwyn Garden City, Herts. Analytical Chemist with I.C.I. Ltd., Plastics Division, Welwyn. *Signed by:* M. Clasper, S. Grossman, A. W. Jukes.

Berliner, Ernst, M.A. and Ph.D. (Harvard). American. Department of Chemistry, Bryn Mawr College, Bryn Mawr, Pennsylvania, U.S.A. Professor of Chemistry. *Signed by:* P. B. D. de la Mare, C. A. Bunton, A. Maccoll.

Born, Harry, M.Sc. (Hebrew Univ., Jerusalem). Israelian. The Weizmann Institute of Science, Rehovoth, Israel. Research Chemist. *Signed by:* S. Pinchas, A. Meisels, D. H. Samuel.

Braunsberg, Hannelore, Ph.D. (Lond.). British. University College Hospital Medical School, London, W.C.1. Biochemical research. *Signed by:* A. L. Stern, E. A. Braude, J. E. Falk.

***Burton, James Dennis,** B.Sc. (Lond.), A.R.I.C. British. c/o 45, Garmoyle Road, Liverpool 15. Research Chemist at University of Liverpool. *Signed by:* H. K. Dean, M. Woodhead, J. P. Riley.

Clarke, Albert John, B.Sc.(Glas.). British. 23, Fashoda Road, Bromley, Kent. Student at Imperial College, London. *Signed by:* L. Crombie, R. Ahmad, O. H. Wheeler.

***Coombs, Maurice Martin,** B.Sc.(Lond.). British. 53, Craven Gardens, Wimbledon, S.W.19. Research Student. *Signed by:* W. H. Gray, J. Kenyon, C. L. Arcus.

***Creed, John Ernest Chaplin.** British. 119, Greencroft Gardens, London, N.W.6. Student at University of London. *Signed by:* J. F. J. Dippy, A. M. James, W. A. Ross.

Davies, John Mervyn, B.Sc. (Wales). British. c/o Smethursts Grimsby Ltd., Ropery Street, Grimsby. Chief Chemist. *Signed by:* I. D. Morton, W. A. Swindin, E. Brown.

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Dunbar, James, A.R.I.C. British. 12, Scott Terrace, Chopwell, Newcastle-on-Tyne. Chemist at Carville Power Station, Wallsend-on-Tyne. *Signed by:* W. F. Stones, E. W. Mills, J. Gordon.

***Elliott, Walter Norman.** British. 151, High Street, Uckfield, Sussex. Student. *Signed by:* R. J. Parsons, N. H. Pratt, A. E. Owen.

***Fuller, Glenn,** B.S. (Stanford), M.S. (Illinois). American. 209, Noyes Laboratory, University of Illinois, Urbana, Illinois, U.S.A. Student. *Signed by:* D. Y. Curtin, A. S. Hay, S. Gelfand.

Galaby, Mahmoud, M.Sc. (Cairo). Egyptian. Chemistry Department, Faculty of Science, Fouad 1st University, Giza, Egypt. Assistant Lecturer. *Signed by:* H. A. Fahim, F. G. Baddar, M. I. Ali.

***Glennie, Douglas William,** M.A. (British Columbia). Canadian. Bagley Hall, University of Washington, Seattle 5, Washington, U.S.A. Student. *Signed by:* B. I. Rowland, S. B. Maerov, T. H. Liddicoet.

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PAPERS RECEIVED

(List of papers received between March 28th and April 24th, 1953.)

" The structure of karaya gum (*Cochlospermum gossypium*)." By E. L. Hirst and Sonia Dunstan.

" Amino-sugars. Part I. Acyclic derivatives of D-glucosamine." By M. W. Whitehouse and P. W. Kent.

" 2 : 4 : 5-Trimethyl-D-arabonamide." By P. W. Kent and M. W. Whitehouse.

" Low-temperature absorption and phosphorescence spectra of some iodo-compounds." By J. Ferguson and T. Iredale.

" Synthesis of plant-growth regulators. Part II. Dichloro-β-naphthyloxyacetic acids." By (Miss) P. M. James and D. Woodcock.

" 3 : 6-Disubstituted fluorenes. Part I. The attempted introduction of a 6 : 6′-methylene bridge directly into 3 : 3′-diaminodiphenyl and some of its derivatives." By A. Barker and C. C. Barker.

" A synthesis of 1-ethyl-9 : 10-dihydro-10-methyl-6 : 7-methylenedioxyphenanthridine." By R. B. Kelly, W. I. Taylor, and K. Wiesner.

" Anodic syntheses. Part IX. Unsaturated and hydroxy-acids. A direct stereochemical connection of eoleic and elaidic acids with erucic and brassidic acids." By D. G. Bounds, R. P. Linstead, and B. C. L. Weedon.

" The chemistry of fungi. Part XIX. The structure of eburicoic acid." By J. S. E. Holker, A. D. G. Powell, Alexander Robertson, J. J. H. Simes, R. S. Wright, and (in part) R. M. Gascoigne.

" The chemistry of fungi. Part XX. Metabolites of *Chaetomium indicum* Corda." By D. H. JOHNSON, ALEXANDER ROBERTSON, and W. B. WHALLEY.

" The chemistry of fungi. Part XXI. Asperxanthone, and a preliminary examination of aspergillin." By N. A. LUND, ALEXANDER ROBERTSON, and W. B. WHALLEY.

" Peroxides of tetrahydrocarbazole and related compounds. Part V. 8-Bromo-1 : 2 : 3 : 4-tetrahydrocarbazole." By R. J. S. BEER, T. BROADHURST, and ALEXANDER ROBERTSON.

" Electric moments and intermolecular hydrogen bonds of cyclic amides and oxazolidones : a correction." By ERNST FISCHER.

" The liquid dinitrogen tetroxide solvent system. Part XV. Thermal and conductivity measurements on nitromethane–liquid dinitrogen tetroxide mixtures." By C. C. ADDISON, N. HODGE, and J. LEWIS.

" The system $Cr_2(SO_4)_3$–H_2SO_4–H_2O." By DUNCAN TAYLOR.

" The methoxyl content of gum tragacanth." By KEITH SELBY.

" Substitution reactions of hexœstrol and analogous compounds." By NG. PH .BUU-HOÏ, DENISE LAVIT, and NG. D. XUONG.

" The action of Grignard reagents on anhydro-sugars of ethylene oxide type. Part II. The behaviour of methyl 2 : 3-anhydro-4 : 6-*o*-benzylidene-α-D-alloside towards ethyl- and phenyl-magnesium halides." By G. N. RICHARDS and L. F. WIGGINS.

" Quinones. Part III. Addition reactions of 1 : 4-naphthaquinones substituted in the 6-position." By J. M. LYONS and R. H. THOMSON.

" The ultra-violet absorption spectra of some pyrroles." By GERALD H. COOKSON.

" The condensation of 1 : 3-dimethylindole with hexane-2 : 5-dione and heptane-2 : 6-dione." By SIR ROBERT ROBINSON and J. E. SAXTON.

" Constitution of carpaine." By T. R. GOVINDACHARI and N. S. NARASIMHAN.

" The chemistry of the triterpenes and related compounds. Part XVIII. Elucidation of the structure of polyporenic acid C." By A. BOWERS, T. G. HALSALL, E. R. H. JONES, and (in part) A. J. LEMIN.

" The synthesis of sugars from simpler substances. Part VII. Enzymic synthesis of 5-deoxy-D-xylulose." By P. A. J. GORIN, L. HOUGH, and J. K. N. JONES.

" The anodic behaviour of copper in neutral and alkaline chloride solutions." By H. LAI and H. R. THIRSK.

" The synthesis of emetine and related compounds. Part II. The synthesis of (±)-rubremetinium bromide." By ALAN R. BATTERSBY, H. T. OPENSHAW, and HAMISH C. S. WOOD.

" Studies in the steroid group. Part LXI. Oxidation of 5α-hydroxy- and 5α-acetoxy-$\Delta^{7:9}$-steroids." By PETER BLADON, H. B. HENBEST, E. R. H. JONES, GEOFFREY W. WOOD, and (in part) D. C. EATON, and A. A. WAGLAND.

" Studies in the steroid group. Part LXII." By PETER BLADON, H. B. HENBEST, E. R. H. JONES, (MISS) B. J. LOVELL, GEOFFREY W. WOOD, and GILBERT F. WOODS.

" Studies in the synthesis of cortisone. Part I." By J. ELKS, R. M. EVANS, D. E. HATHWAY, J. F. OUGHTON, and G. H. THOMAS.

" Studies in the synthesis of cortisone. Part II. A new synthesis of 3β-acetoxyergost-22-en-11-one." By J. ELKS, R. M. EVANS, C. H. ROBINSON, G. H. THOMAS, and J. L. WYMAN.

" Nitramines and nitramides. Part V. Nitrations of urethane, *N*-methylurethane, urea, and " P.C.X." in sulphuric acid." By C. HOLSTEAD, ALEX. H. LAMBERTON, and (in part) P. A. H. WYATT.

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" The degradation of carbohydrates by alkali. Part II. Lactose." By W. M. CORBETT and J. KENNER.

" A convenient synthesis of *bicyclo*[5 : 3 : 0]dec-1(7)-en-8-one and related compounds." By A. M. ISLAM and R. A. RAPHAEL.

" The anodic oxidation of metals at very low current density. Part II. Nickel." By S. E. S. El Wakkad and (Miss) Sayeda H. Emara.

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" Olefin co-ordination compounds. Part III. Infra-red spectra and structure. Attempted preparation of acetylene complexes." By J. Chatt and L. A. Duncanson.

" Chemical action of ionising radiations in solution. Part XI. The reaction of free radicals, produced by *X*-rays, on lactic acid in aqueous solution with particular reference to the effect of molecular oxygen." By G. R. A. Johnson, G. Scholes, and J. Weiss.

" 4 : 4′-Difluorodianthron-9-ylidene and an attempted synthesis of 1 : 1′-dibromodianthron-9-ylidene." By Ernst D. Bergmann and M. J. E. Loewenthal.

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" Steric hindrance in analytical chemistry. Part II. The interaction of ferrous salts with 2-substituted 1 : 10-phenanthrolines." By H. Irving, M. J. Cabell, and D. H. Mellor.

" 1 : 2-*O*-*iso*Propylidene-β-D-altrofuranose." By F. H. Newth.

" Anionotropic systems. Part III. The synthesis and rearrangement of 3-hydroxy-3 : 5-dimethylhex-4-en-2-one." By E. A. Braude and C. J. Timmons.

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B. *Pamphlets.*

BRITISH IRON AND STEEL FEDERATION. *Iron and Steel Industrial Research Council.* Statistical methods in industry. [London] 1943. pp. 74. ill.

BRITISH IRON AND STEEL RESEARCH ASSOCIATION. The fight against rust. The work of the Corrosion Committee. . . . London 1952. pp. 25. ill.
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OF THE
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OFFICIAL ANNOUNCEMENTS

DEATHS.

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Alan Edwin Bradfield (Maidstone).....	Dec. 4th, 1924.	May 3rd, 1953.
Gilbert John Fowler (Bangalore)	May 7th, 1891.	Mar. 21st, 1953.
William Nikola Gates (Haifa)	Oct. 3rd, 1946.	Mar. 24th, 1953.
Samuel Smiles (London, S.W.1) ..... (Hon. Sec. 1912—20, V.P. 1920—23)	Dec. 1st, 1898.	May 6th, 1953.
Charles Sydney Wood (Barnsley)	Dec. 16th, 1934.	Mar. 11th, 1953.

CONGRATULATIONS.

The President has conveyed the congratulations of the Society to Sir Robert Robinson on the award of the Priestley Medal by the American Chemical Society.

SCIENTIFIC MEETINGS.

The following dates of Scientific Meetings during the Session 1953—54 have been approved by the Council.

1953.	1954.
October 15th	January 21st
November 5th	February 4th
November 19th	February 18th
December 3rd	March 25th
December 17th	May 6th
	June 3rd

The Anniversary Meeting will be held in Manchester on March 31st, April 1st and 2nd, 1954.

LOCAL REPRESENTATIVES.

A number of Local Representatives have retired due to expiration of their terms of office, and the following appointments have been made :

Dr. E. J. Bourne (Birmingham) in place of Dr. L. L. Bircumshaw.
Dr. R. N. Haszeldine (Cambridge) in place of Dr. B. Lythgoe.
Dr. W. B. Orr (Hull) in place of Professor Brynmor Jones.
Dr. D. W. Broad (Liverpool) in place of Mr. L. A. Haddock.
Dr. J. E. McKail (North Wales) in place of Dr. W. Rogie Angus.
Dr. R. G. R. Bacon (Northern Ireland) in place of Dr. H. Graham.
Dr. C. C. Addison (Nottingham) in place of Dr. D. O. Jordan.
Dr. N. B. Chapman (Southampton) in place of Dr. K. R. Webb.

The President has conveyed the thanks of the Council to the retiring Local Representatives for their services to the Society.

QUARTERLY REVIEWS.

Quarterly Reviews, Vol. VII, No. 2, contains the following articles :

" Comments on the thermochemistry of the elements of groups IVB and IV," by E. C. Baughan.

" The heats of formation of simple inorganic compounds," by L. H. Long.

" Recent developments in the preparation of natural and synthetic straight-chain fatty acids," by F. D. Gunstone.

" The reactions of methyl radicals," by A. F. Trotman-Dickenson.

Articles to be published in future issues include the following :

" Stereochemistry of *cyclo*hexane," by O. Hassel.

" The association of carboxylic acids," by G. Allen and E. F. Caldin.

" Steroidal alkaloids," by J. McKenna.

" The behaviour of organic compounds in sulphuric acid," by R. J. Gillespie and J. A. Leisten.

" Nuclear magnetic resonance absorption," by J. A. S. Smith.

" Boron trifluoride co-ordination compounds," by N. N. Greenwood and R. L. Martin.

" Inorganic chromatography," by R. A. Wells.

QUARTERLY REVIEW PANELS.

The suitability of articles for *Quarterly Reviews* is assessed by Panels drawn from the Publication Committee. The present membership of the Panels is as follows :

Inorganic Chemistry Panel.

Professor J. M. Robertson, M.A., D.Sc., F.R.S.
Mr. R. P. Bell, M.A., B.Sc., F.R.S.
Dr. H. Irving, M.A., D.Phil., F.R.I.C.

Organic Chemistry Panel.

Professor E. D. Hughes, D.Sc., F.R.I.C., F.R.S.
Professor R. D. Haworth, D.Sc., Ph.D., F.R.S.
Professor M. Stacey, Ph.D., D.Sc., F.R.S.

Physical Chemistry Panel.

Professor F. S. Dainton, M.A., Ph.D.
Dr. L. E. Sutton, M.A., D.Phil., F.R.S.
Professor C. E. H. Bawn, B.Sc., Ph.D., F.R.S.

Correspondence should, however, normally be addressed in the first place to the Editor.

LIBRARY.

Fellows are reminded that from July 16th until September 30th, 1953, the Library will be open from 10 a.m. to 5 p.m. daily, except during the fortnight August 3rd to 15th inclusive, when it will be closed for revision and cleaning.

THE CORDAY-MORGAN MEDAL AND PRIZE.

The Corday–Morgan Medal and Prize, consisting of a Silver Medal and a monetary Prize of 150 Guineas, is awarded annually to the chemist of either sex and of British Nationality, who, in the judgment of the Council of the Chemical Society, shall have published during the year in question the most meritorious contribution to experimental chemistry, and who shall not, at the date of publication, have attained the age of thirty-six years. The Council has power to suspend the award in any year in which no suitable candidate presents himself or is brought to the notice of the Council.

Copies of the rules governing the award may be obtained from the General Secretary. Applications or recommendations in respect of the award for the year 1952 must be received not later than December 31st, 1953, and applications for the award for 1953 are due before the end of 1954.

MINUTES OF SCIENTIFIC MEETINGS

Minutes of a

SCIENTIFIC MEETING

held at Burlington House on April 30th, 1953, at 7.30 p.m.

The President, PROFESSOR C. K. INGOLD, D.Sc., F.R.S., was in the Chair.

MINUTES.

The Minutes of the Scientific Meeting held at the Royal Institution on Thursday, March 26th, 1953, were read, and were confirmed and signed.

FORMAL ADMISSION OF FELLOWS.

The following were admitted Fellows of the Society: H. S. Taylor, J. H. Carter, E. H. Baker, J. H. Semark, L. Benjamin, M. W. Roberts.

LECTURE.

The President called upon Professor H. S. Taylor, D.Sc., LL.D., F.R.S., to deliver the lecture entitled "The Scientific Problems of Surface Catalysis." At the conclusion of the lecture, a vote of thanks to Professor Taylor, proposed by Sir Eric Rideal was carried with acclamation.

Minutes of a

SCIENTIFIC MEETING

held at Burlington House on May 7th, 1953, at 7.30 p.m.

The President, PROFESSOR C. K. INGOLD, D.Sc., F.R.S., was in the Chair.

MINUTES.

The Minutes of the Scientific Meeting held at Burlington House on April 30th, 1953, were read, and were confirmed and signed.

FORMAL ADMISSION OF FELLOWS.

The following were admitted Fellows of the Society: L. Merzer, D. A. Pantony, A. E. Richards, D. M. Gilbey.

SCIENTIFIC COMMUNICATIONS.

The following papers were read and discussed:

"The catalytic deuteration of organic compounds. Part III. Exchange reactions of saturated aliphatic carboxylic acids." By J. Bell, T. Hill, K. A. MacDonald, R. I. Reed, and (in part) A. MacDonald. "Part IV. The deuteration of optically active lactic acid." By J. Bell, K. A. MacDonald, and R. I. Reed.

"Studies on biological methylation. Part XIV. The formation of trimethylarsine and dimethyl selenide in cultures of *Scopulariopsis brevicaulis* or *Aspergillus niger* using methyl sources ^{14}C." By F. Challenger, D. B. Lisle, and P. B. Dransfield.

"Oxygen exchange between nitric acid and water. Part III. The nitrous acid catalysed exchange." By C. A. Bunton, E. A. Halevi, and D. R. Llewellyn.

LIST OF APPLICATIONS FOR FELLOWSHIP

(Fellows wishing to lodge objection to the election of these candidates should communicate with the Honorary Secretaries within ten days of the date of Publication of the Journal *for June,* 1953. *Such objections will be treated as confidential. The forms of application are available in the Library.)*

***Ashworth, Peter Frederic.** British. The School House, Carleton-in-Craven, Skipton, Yorks. Student. *Signed by:* D. H. Hey, V. Gold, J. I. G. Cadogan.

***Burns, Duncan Thorburn.** British. 278, Oxford Road, Gomersal, Nr. Leeds. Student at the University of Leeds. *Signed by:* E. G. Cox, R. S. Bradley, P. A. Briscoe.

***Connett, John Edward,** B.Sc. (Lond.). British. 42, Milner Road, Merton Park, S.W.19. Research Student. *Signed by:* J. S. Burgess, Y. Pocker, C. A. Bunton.

Ernst, Zbigniew Ludwik, Dr.Phil. (Poznan). Polish. 64, Ranelagh Road, Ealing, W.5. Lecturer. *Signed by:* J. E. Salmon, V. S. Griffiths, D. I. Stock.

Faulds, William Farquharson, B.Sc. (Glasgow). British. 32, Ulverston Road, Swarthmoor, Ulverston, Lancs. Chemist at Glaxo Ltd. *Signed by:* A. Williams, D. A. Higgins, H. W. Gurney.

***Fielden, Thomas Brian,** A.R.I.C. British. 39, Miller Avenue, Crosby, Liverpool, 23. Research Chemist at Rodd Ltd. *Signed by:* H. Bradbury, C. B. Rice, N. Smith.

***Fogerty, Alan Carl,** B.Sc. (Sydney). Australian. 307, Sailor Bay Road, Northbridge, N.S.W., Australia. Student at Sydney University. *Signed by:* A. J. Birch. R. J. W. Le Fèvre, T. Iredale.

***Gramshaw, John William.** British. Highcroft, Wellingborough Road, Rushden, Northants. Student at the University of Nottingham. *Signed by:* J. C. Roberts, C. C. Addison, F. C. Laxton.

Holland, Anthony, M.Sc. (N.U.I.). Ph.D. (Cantab), A.R.I.C. Irish. 45 Grey Towers Avenue, Hornchurch, Essex. Research Chemist. *Signed by:* R. D. MacDonald, S. S. Berg, R. F. Collins.

***Lawrence, Keith Scott Spencer,** B.Sc. (Lond.). British. Cornerways, Meadow Way, Burgh Heath, Tadworth, Surrey. Research Student. *Signed by:* V. S. Griffiths, W. H. Lee, G. A. H. Elton.

***Lee, John Barry.** Australian. 108, Quakers Road, Quakers Hill, N.S.W., Australia. Technical Assistant at C.S.I.R.O. *Signed by:* L. N. Short, R. S. Nyholm, G. W. K. Cavill.

***Littlewood, Roy,** B.Sc. (Lond.). British. 6, Newsome Avenue, Newsome, Huddersfield. Student at Kings College, London. *Signed by:* E. K. Rideal, D. H. Hey, J. Boulton.

***Lyons, Michael John.** British. 16, Park Boulevard, Gidea Park, Romford. Student at South East Essex Technical College. *Signed by:* J. A. Leiston, P. R. Hadley, M. J. Birchenough.

Odell, Allan Lloyd, M.Sc. (N.Z.). A.N.Z.I.C. British. Auckland University College, P.O. Box 2553. Auckland, New Zealand. Lecturer. *Signed by:* F. J. Llewellyn, S. G. Brooker, L. H. Briggs.

***Orr, Samuel Francis Desmond,** B.Sc. and M.A. (Oxon). British. Chester Beatty Research Institute, Royal Cancer Hospital, Fulham Road, London, S.W.3. Research Chemist. *Signed by:* E. M. F. Roe, F. Bergel, R. N. Beale.

***Paterson, William Crawford.** British. 16, Lomondside Avenue, Clarkston, Glasgow. Student at Royal Technical College. *Signed by:* A. B. Crawford, J. A. Cranston, H. G. A. Anderson.

Raynham, Ernest Albert, B.Sc. (Reading). British. 33, May Road, Twickenham, Middlesex. Chemist at North Thames Gas Board. *Signed by:* G. H. Cheesman, A. E. Laxton, K. W. Allen.

Reveley, Anthony. British. 35, New Park Street, Devizes, Wilts. Student. *Signed by:* M. J. Birchenough, F. A. Filby, J. A. Leisten.

***Richards, John Lewis,** B.Sc. (Sheffield). British. 24, High Street, Baldock, Herts. Scientific Officer, R.N.S.S. *Signed by:* J. Ritchie, A. S. C. Lawrence, H. J. V. Tyrell.

Rigby, Bryan. British. Halliday Hall, South Side, Clapham Common, S.W.4. Student at Kings College, London. *Signed by:* S. H. Harper, C. C. Ware, D. Winter.

Sansome, Arthur George, B.Sc. (Lond.). A.R.I.C. British. 20, London Road, Maidstone, Kent. Industrial Chemist. *Signed by:* C. E. Wiseman, A. J. M. Bailey, R. G. Minor.

Sprinzak, Yair, Ph.D. (Jerusalem). Israeli. The Weizmann Institute, Rehovoth, Israel. Research Chemist. *Signed by:* Y. Hirshberg, S. Pinchas, M. H. Avramov.

Sturtevant, Julian M., A.B. (Columbia), Ph.D. (Yale). American, Seaview Avenue, Branford, Conn., U.S.A. Professor of Chemistry at Yale University. *Signed by:* H. H. Zeiss, W. von E. Doering, C. A. Hargreaves.

Waldron, Norman Michael, Ph.D. (Leeds). British. 348, Leeds Road, Fagley, Bradford. National Service. *Signed by:* W. S. Reith, F. Challenger, P. A. Briscoe.

***White, John Dennis.** British. 30, Airdale Road, Stone, Staffs. Student at the University of Nottingham. *Signed by:* J. C. Roberts, C. C. Addison, D. O. Jordan.

Zook, Harry D. M.S. (Northwestern), Ph.D. (Pennsylvania State College). American. Department of Chemistry, The Pennsylvania State College, State College, Pennsylvania, U.S.A. Assistant Professor of Chemistry. *Signed by:* P. S. Skell, L. H. Sommer, M. L. Jackson.

UNDER SPECIAL PROVISION APPERTAINING TO CANDIDATES RESIDENT ABROAD.

Barbour, John Baillie, M.Sc. and Ph.D. (Natal) South African. Chemistry Department, University of Natal, Pietermaritzburg, Natal, South Africa. Research Student. *Signed by:* F. L. Warren.

***Bolto, Brian Alfred,** B.Sc. (Western Australia). Australian. 155, Lansdowne Road, South Perth, Western Australia. Student. *Signed by:* J. Miller, D. E. White.

***Dougall, Donald Keir,** B.Sc. (Western Australia). British. 24, Archdeacon Street, Nedlands, Western Australia. Research Student. *Signed by:* D. E. White, J. Miller.

Fitch, Howard Montgomery, B.S. (Texas), Ph.D. (Virginia). American. 235 E. 22nd St., New York 10, New York, U.S.A. Chemist. *Signed by:* E. Mosettig.

***Gordon, Milton Paul,** B.A. (Minnesota). American. 1301 W. Stoughton Street, Urbana, Illinois, U.S.A. Student. *Signed by:* D. Y. Curtin.

Murahashi, Shunsuke, D.Sc. (Tohoku). Japanese. Faculty of Science, Osaka University, Nakanoshima-4, Osaka, Japan. Professor of Chemistry. *Signed by:* W. C. Frith.

Rout, Mahendra Kumar, M.Sc. (Patna), Ph.D. (Utkal). Indian. Ravenshaw College, Cuttack 3, Orissa, India. Lecturer. *Signed by:* J. C. Bardhan.

Salahud-Din, Mohammad, B.Sc. (Delhi), M.Sc. (Panjab). Pakistani. Panjab University, Institute of Chemistry, Lahore, Pakistan. Teacher. *Signed by:* M. I. D. Chughtai, S. A. Faseeh.

Smissman, Edward Ervin, B.Sc. (Illinois), Ph.D. (Wisconsin). American. College of Pharmacy, 808, South Wood Street, Chicago, Illinois, U.S.A. Assistant Professor of Chemistry. *Signed by:* R. Daniels.

Subramanian, Venkateswarier, M.A. (Madras). Indian. Central College, Jaffna, Ceylon. Lecturer. *Signed by:* A. P. Mahadevan.

* Reduced annual subscription.

PAPERS RECEIVED

(List of papers received between April 25th and May 22nd, 1953.)

" Organosilicon compounds. Part VI. The kinetics of the acid-catalysed cleavage of *p*-methoxyphenyltrimethylsilane." By C. EABORN.

" The oxidative hydrolysis of 4-α-cyanobenzyl*meso*benzanthrone." By NEIL CAMPBELL and ANTHONY A. WOODHAM.

" Hydrazine. Part IV. The bromostannates and bromostannites of hydrazine, dimethyl ketazine, and pentan-3-one hydrazone." By W. PUGH. With a note on optical properties of crystals. By H. C. G. VINCENT.

" Oxygen exchange between nitric acid and water. Part III. Catalysis by nitrous acid." By C. A. BUNTON, E. A. HALEVI, and D. R. LLEWELLYN.

" The phthalates of 3 : 5 : 5-trimethylhexanol." By D. G. JONES and G. H. WHITFIELD.

" The molecular rotations of polycyclic compounds. Part II. Diterpenoids and sesquiterpenoids." By W. KLYNE.

" The chemistry of fluorene. Part III. The condensation of 9-fluorenylsodium with acid chlorides and anhydrides." By E. J. GREENHOW, E. N. WHITE, and D. MCNEIL.

" Researches on acetylenic compounds. Part XL. The synthesis of some ω-acetylenic acids." By G. EGLINTON and M. C. WHITING.

" Stages in oxidations of organic compounds by potassium permanganate. Part IV. A kinetic study of the oxidation of pinacol by manganic pyrophosphate." By ALAN Y. DRUMMOND and WILLIAM A. WATERS.

" The detection and estimation of 'end groups' in methylcelluloses." By D. I. MCGILVRAY.

" Allylic bromination of unsaturated terpene hydrocarbons, and the synthesis of αβ-unsaturated alcohols." By A. KILLEN MACBETH, B. MILLIGAN, and J. S. SHANNON.

" Optically active forms of 1-methyl-2-2'-pyridylethylamine." By N. B. CHAPMAN and J. F. A. WILLIAMS.

" The polymerizability of methyl α-*tert.*-butylacrylate. Part II." By J. W. C. CRAWFORD.

" The preparation and properties of *cis*- and *trans*-pent-2-en-4-ynes." By J. L. H. ALLAN and M. C. WHITING.

" The properties of penta-1 : 3-diyne." By E. R. H. JONES and M. C. WHITING.

" Exchange reactions and magnetic susceptibilities of complex salts. Part I. Some complex salts of ferric iron." By H. C. CLARK, N. F. CURTIS, and A. L. ODELL.

" Alkaloids of *Glycosmis arbores*. Part II. Constitution of arborine." By (MRS.) D. CHAKRAVARTI, R. N. CHAKRAVARTI, and S. C. CHAKRAVARTI.

" Fluoro-olefins. Part II. Synthesis and reactions of some 3 : 3 : 3-trihalogenopropenes." By R. N. HASZELDINE.

" Studies of trifluoroacetic acid. Part VIII. Diazotisation of aromatic amines in aqueous trifluoroacetic acid and other perhalogeno-carboxylic acids." By M. R. PETTIT, M. STACEY, and J. C. TATLOW.

" The ionisation of guanidine and of amino-acids in sulphuric acid." By GWYN WILLIAMS and MURIEL L. HARDY.

" Structural observations on ' active methionine.' " By J. BADDILEY, G. L. CANTONI, and G. A. JAMIESON.

" Vapour pressures and the heats of sublimation of anthracene and of 9 : 10-diphenylanthracene." By B. STEVENS.

" Synthesis of 2-*O*-methyl- and 3 : 4-di-*O*-methyl-D-galacturonic acid." By R. A. EDINGTON and ELIZABETH E. PERCIVAL.

" A note on the fluorescence spectrum of coronene." By B. BROCKLEHURST.

" The revival of platinum catalysts poisoned by derivatives of arsenic." By E. B. MAXTED and G. T. BALL.

" Radial diffusion and reaction at the mercury capillary electrode." By N. S. HUSH.

" Aromatic hydrocarbons. Part LXVII. Triangulene derivatives. Part II." By E. CLAR and D. G. STEWART.

" The hydration and hydrolysis of anhydrous aluminium bromide." By FRED FAIRBROTHER and WILLAIM C. FRITH.

" Preparation of *N'*-substituted 2-amino-4-methylthiazoles." By M. K. ROUT and H. K. PUJARI.

" The catalytic deuteration of organic compounds. Part III. Exchange reactions of saturated aliphatic carboxylic acids." By J. BELL, T. HILL, K. A. MACDONALD, R. I. REED, and (in part) A. MACDONALD.

" The catalytic deuteration of organic compounds. Part IV. The deuteration of optically active lactic acid." By J. BELL, K. A. MACDONALD, and R. I. REED.

" Temperature coefficients of fluorescence." By E. J. BOWEN and R. J. COOK.

" Studies of the synthesis of neurotropic and musculotropic stimulators and inhibitors. Part VI. Thia- and dithia-alkanebisquaternary ammonium salts as neuromuscular- and ganglion-blocking agents." By K. J. M. ANDREWS, F. BERGEL, and A. L. MORRISON.

" The retardation of benzaldehyde autoxidation. Part V. The effects of some quinones." By J. R. DUNN and WILLIAM A. WATERS.

" Hydrazine. Part V. Complex halides of aluminium and hydrazine." By W. PUGH and M. C. B. HOTZ. With a note on optical properties of the crystals. By H. C. G. VINCENT.

" Steroids. Part V. Partial synthesis of 9 : 11-anhydrocorticosterone acetate." By R. CASANOVA, C. W. SHOPPEE, and (in part) G. H. R. SUMMERS.

" Studies of *N*-halogeno-compounds. Part V. The interaction of dialkylchloramines with phenols." By L. O. BROWN and F. G. SOPER.

" Alicyclic glycols. Part XII. Derivatives of *cyclo*heptane-1 : 2-diol." By L. N. OWEN and G. S. SAHARIA.

" The synthesis of caryophyllenic acid." By A. CAMPBELL and H. N. RYDON.

" Studies in stereochemical structure. Part VI. Heterocyclic compounds from benzoin." By ROBERT ROGER, KENNETH C. REID, and ROBERT WOOD.

" Synthesis of some methyl-substituted 2 : 3 : 6-trihydroxypyridines." By D. E. AMES, R. E. BOWMAN, and T. F. GREY.

" The mechanism of hydrolysis of acid chlorides. Part V. The effect of solvent and hydroxyl ions on the rate of solvolysis of substituted benzoyl chlorides." By D. A. BROWN and R. F. HUDSON.

" Thiohydantoins. Part IV. The action of Raney nickel on some monothiohydantoins." By H. C. CARRINGTON, C. H. VASEY, and W. S. WARING.

" The preparation and properties of tellurium dichloride." By E. E. AYNSLEY.

" Plasmalogens. Part I. A synthesis of the ethanolamine ester of 2 : 3-palmitylidene-1-glycerophosphoric acid." By M. J. EGERTON and T. MALKIN.

" The chemistry of the triterpenes and related compounds. Part XIX. Further evidence concerning the structure of polyporenic acid A." By T. G. HALSALL, R. HODGES, and E. R. H. JONES.

" The chemistry of the triterpenes and related compounds. Part XX. The stereochemistry of ring E of betulin and related compounds." By (MISS) JOYCE M. GUIDER, T. G. HALSALL, and E. R. H. JONES.

" Quinoxaline *N*-oxides. Part I. The oxidation of quinoxaline and its *Bz*-substituted derivatives." By JUSTUS K. LANDQUIST.

" Quinoxaline *N*-oxides. Part II. Oxides of *Py*-substituted quinoxalines." By JUSTUS K. LANDQUIST and G. J. STACEY.

" Quinoxaline *N*-oxides. Part III. Photochemical decomposition of quinoxaline mono- and di-*N*-oxides." By JUSTUS K. LANDQUIST.

" Triterpenoids. Part XIV. The constitution of quinovic acid." By D. H. R. BARTON and P. DE MAYO.

" Synthesis of 2-(8-^{14}C)naphthylamine." By J. R. CATCH, H. P. W. HUGGILL, and A. R. SOMERVILLE.

" A new synthesis of naphthalene. Studies of phenylbutadienes. Part I." By S. A. FASEEH.

" New pyridine complexes of tellurium tetrafluoride." By E. E. AYNSLEY and G. HETHERINGTON.

" Syntheses in the morphine series. Part V. Model experiments for the introduction of oxygen at $C_{(6)}$." By DOV ELAD and DAVID GINSBURG.

" Reaction of nitric oxide with gaseous hydrocarbon free radicals. Part I. *iso*Propyl radical." By H. T. J. CHILTON and B. G. GOWENLOCK.

" Dambonitol : its isolation from *Dyera lowii* and *Dyera costulata*, and its constitution." By A. J. COMOLO and A. K. KIANG.

" The reactions of organic derivatives of elements capable of valency-shell expansion. Part I. (i) Preliminary considerations. (ii) A comparison of the near-ultra-violet absorptions of unsaturated derivatives of nitrogen, phosphorus, and sulphur with that of their saturated analogues." By DENIS C. NICHOLSON, EUGENE ROTHSTEIN, ROWLAND W. SAVILLE, and RONALD WHITELEY.

" The reactions of organic derivatives of elements capable of valency-shell expansion. Part II. Unsaturated quaternary phosphonium salts." By EUGENE ROTHSTEIN, ROWLAND W. SAVILLE, and (in part) PETER E. HORN.

" The reactions of organic derivatives of elements capable of valency-shell expansion. Part III. Reactions of propenedisulphonamides." By DENIS C. NICHOLSON and EUGENE ROTHSTEIN.

" The reaction of organic derivatives of elements capable of valency-shell expansion. Part IV. Experiments with thioacetals and related substances. Part IV. 1 : 1 : 3 : 3-Tetrakisalkylthio-propane and -propene, and their oxidation products." By EUGENE ROTHSTEIN and RONALD WHITELEY.

" Synthesis of *cis*- and *trans-n*-octadecenes by selective catalytic hydrogenation of acetylenes." By B. B. ELSNER and P. F. M. PAUL.

" Methods of preparation of cyanogen fluoride." By H. J. CALLOMON, H. W. THOMPSON, F. ALLAN ANDERSEN, and BÖRGE BAK.

" The structure of the di*iso*propylidene derivatives of (−)-inositol and pinitol." By S. J. ANGYAL, C. G. MACDONALD, and N. K. MATHESON.

" A comparison of the apparent dipole moments of the brominated methanes dissolved in benzene with the true values determined as gases." By A. D. BUCKINGHAM and R. J. W. LE FÈVRE.

" Molecular polarisability. The measurement of molecular Kerr constants in solution." By CATHERINE G. LE FÈVRE and R. J. W. LE FÈVRE.

" Melanin and its precursors. Part VII. Enzymic oxidation of 2 : 3- and 2 : 5-dihydroxyphenylalanine." By JOHN HARLEY-MASON.

" Carotenoids and related compounds. Part I. Total synthesis of ' all-*trans* '-methylbixin and of a diketone with the capsorubin chromophore." By RASHID AHMAD and B. C. L. WEEDON.

" Carotenoids and related compounds. Part II. C_{10} Intermediates for the synthesis of carotenoids." By PAUL MILDNER and B. C. L. WEEDON.

" Carotenoids and related compounds. Part III. The synthesis of a bisnorcrocetin, a pentaene degradation product of azafrin, aud other polyenes." By RASHID AHMAD and B. C. L. WEEDON.

" The use of radioactive sulphur, ^{35}S, in a study of the oxidation of *cyclo*hexyl methyl sulphide with *tert.*-butyl hydroperoxide." By G. AYREY, D. BARNARD, and C. G. MOORE

" Isotopic tracer studies of pyrolytic reactions." By J. BELL and R. I. REED.

ADDITIONS TO THE LIBRARY

I. *Donations*

A. *Books.*

ALCHEMIST. Vols. 14—16. Leeds 1950—52. (*Reference.*) Thomas Waide. 10*s.* per annum. From Crookes Laboratories.

BARNETT, EDWARD DE BARRY, and WILSON, CECIL LEEBURN. Inorganic chemistry. A text-book for advanced students. London 1953. pp. xiv + 512. ill. (Second copy.) Longmans Green. 35*s.* (*Recd.* 18/5/53.) From Dr. E. de B. Barnett.

FLORKIN, MARCEL. Transporteurs d'oxygène. Paris 1934. pp. 44. (Actualités Scientifiques et Industrielles, 102.)

HANDBUCH DER PFLANZENANALYSE. Edited by G. KLEIN. Vols. 2—4 (in 5 vols.). Wien 1932—33. From Dr. P. Haas.

INGOLD, CHRISTOPHER KELK. Structure and mechanism in organic chemistry. Ithaca 1953. pp. viii + 828. ill. (The George Fisher Baker Non-Resident Lectureship in Chemistry at Cornell University, 1950—51). Cornell Univ. Press. $9.75. (*Recd.* 21/5/53). From the Author.

KYOTO UNIVERSITY. *Institute for Chemical Research.* The commemoration volume for the Silver Jubilee. Kyoto 1951. pp. iii + 195. ill. (*Recd.* 5/5/53.) From the Bureau of Abstracts.

LEDERER, EDGAR. Les caroténoïdes des plantes. Paris 1934. pp. 83. (Actualités Scientifiques et Industrielles, 137.) From Dr. P. Haas.

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LOCAL REPRESENTATIVES OF THE CHEMICAL SOCIETY

Aberdeen.	R. H. Thomson, Ph.D., F.R.I.C., Chemistry Department, The University, Old Aberdeen.
Australia.	Professor A. J. Birch, M.Sc., D.Phil., Department of Organic Chemistry, The University, Sydney, N.S.W., Australia.
Birmingham.	E. J. Bourne, B.Sc., Ph.D., Department of Chemistry, The University, Edgbaston, Birmingham, 15.
Bristol.	F. H. Pollard, B.Sc., Ph.D., A.R.I.C., Chemistry Department, The University, Woodland Road, Bristol.
Cambridge.	R. N. Haszeldine, B.Sc., Ph.D., University Chemical Laboratory, Pembroke Street, Cambridge.
Canada.	W. D. McFarlane, M.A., Ph.D., The Laboratories, The Canadian Breweries Ltd., 496, Queen Street East, Toronto, 2, Canada.
Ceylon.	M. U. S. Sultanbawa, B.Sc., Ph.D., A.R.I.C., Department of Chemistry, The University, Colombo, Ceylon.
Edinburgh.	T. R. Bolam, D.Sc., Chemistry Department, King's Buildings, West Mains Road, Edinburgh.
Exeter.	K. Schofield, B.Sc., Ph.D., Department of Chemistry, Washington Singer Laboratories, Prince of Wales' Road, Exeter.
Glasgow.	F. D. Gunstone, B.Sc., Ph.D., Chemistry Department, The University, Glasgow, W.2.
Hull.	W. B. Orr, D.Sc., Ph.D., Chemistry Department, University College, Hull.
India.	Sir Shanti S. Bhatnager, O.B.E., D.Sc., F.R.S., Secretary, Ministry of Natural Resources and Scientific Research, New Delhi, India.
Irish Republic.	V. C. Barry, D.Sc., F.R.I.C., Medical Research Council of Ireland, The Laboratories, Trinity College, Dublin.
Leeds.	P. A. Briscoe, B.Sc., A.R.I.C., Organic Chemistry Department, the University, Leeds, 2.
Liverpool.	A. K. Holliday, B.Sc., Ph.D., Department of Physical and Inorganic Chemistry, The University, Liverpool.
,,	D. W. Broad, Ph.D., A.R.I.C., Imperial Chemical Industries, Ltd., Research Department, Widnes Laboratory, Widnes.
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,,	M. A. T. Rogers, B.Sc., Ph.D., A.R.I.C., Imperial Chemical Industries, Ltd., Hexagon House, Blackley, Manchester.
Newcastle and Durham.	G. A. Swan, B.Sc., Ph.D, F.R.I.C., Department of Chemistry, King's College, Newcastle-on-Tyne, 1.
New Zealand.	Professor S. N. Slater, M.Sc., D.Phil., A.R.I.C., Chemistry Department, Victoria University College, Wellington, New Zealand.
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Nottingham.	C. C. Addison, D.Sc., Ph.D., F.R.I.C., Chemistry Department, The University, University Park, Nottingham.
Oxford.	H. M. N. H. Irving, M.A., D.Phil., F.R.I.C., Inorganic Chemistry Laboratory, South Parks Road, Oxford.
Pakistan.	M. I. D. Chughtai, M.Sc.Tech., Ph.D., A.R.I.C., Punjab University Institute of Chemistry, The Mall, Lahore, Pakistan.
St. Andrews and Dundee.	H. T. Openshaw, M.A., D.Phil., Chemistry Department, United College, St. Andrews.
Sheffield.	H. J. V. Tyrrell, M.A., B.Sc., Chemistry Department, The University Sheffield, 10.
South Africa.	Professor W. Pugh, Ph.D., B.Sc., F.R.I.C., Chemistry Department, University of Cape Town, Rondebosch, S. Africa.
Southampton.	N. B. Chapman, M.A., Ph.D., A.R.I.C., Department of Chemistry, The University, Southampton.
South Wales.	K. W. Sykes, M.A., B.Sc., D.Phil., Department of Chemistry, University College, Singleton Park, Swansea.

PROCEEDINGS

OF THE

CHEMICAL SOCIETY

OFFICIAL ANNOUNCEMENTS

CONGRATULATIONS.

Birthday Honours List

The President has conveyed the congratulations of the Society to the following Fellows whose names appeared in the Birthday Honours List for 1953:

K.B.E.

Hugh Stott Taylor (Princeton), *Honorary Fellow.*

C.B.E.

Reginald Bradbury Southall (Neath).

ELECTION OF NEW FELLOWS.

The following 57 Candidates were elected Fellows of the Society on May 28th, 1953:

Charles F. H. Allen.
Richard Thomas Arnold.
Bryan Conway Barrass.
Raymond Leslie Bass.
Vito Bellavita.
Ernst Berliner.
Jorge Alfredo Bolzan.
Harry Born.
Hannelore Braunsberg.
James Dennis Burton.
Joseph Andrew Cihocki.
Albert John Clarke.
Maurice Martin Coombs.
John Ernest Chaplin Creed.
John Mervyn Davies.
George Osmore Doak.
James Joseph Downs.
Ross Drummond.
James Dunbar.
Walter Norman Elliott.
Conrad T. O. Fong.
George I. Fujimoto.
Glenn Fuller.
Mahmoud Galaby.
Douglas William Glennie.
Robert Greenhalgh.
Ernest Grunwald.
John Gilbert Hale.
Robert Edward Harman.
Anton Joseph Havlik.
Jack Waugh Heberling.
Donald Hibbert.
Sidney George Humphries.
Alicja Maria Konasiewicz.
Lawrence Joseph Krebaum.
Leslie Aubrey Lawrence.
Dennis Charles Lowe.
William Lee McLeish.
Ronald Hanley Marks.
Clifford Norman Matthews.
Shaun Charles Ralph Meacock.
Willy Mengisen.
Francisco Javier Pellegrino.
Albin George Pinkus.
William Robert Purcell.
Kwesi Akuonu Quagraine.
Kai-tong Quek.
Alexander F. Rosenberg.
Hew Ferguson Scott.
William E. Scott.
Trevor Frank Slater.
Jaroslav Stanek.
Travis E. Stevens.
Charles Edward Stuart.
Colin George Taylor.
Patrick Arthur Toseland.
Winfield Scott Worrall.

BRITISH ABSTRACTS.

Fellows of the Chemical Society who have subscribed to British Abstracts have been aware since the middle of 1952 that very serious financial difficulties had arisen in connection with the publication of these Abstracts.

The Board of the Bureau of Abstracts gave notice that it would have to limit its responsibility to the completion of the 1952 issues of Abstracts and the Indexes up to the end of that year. To enable the organisation to be kept in being while efforts were made

to raise sufficient funds to carry on the publication of Abstracts during 1953, and so give time for an investigation into the possibility of placing the publication on a sound financial basis, D.S.I.R. made a grant of £7,500 and the organisation has been supervised by a " Continuing Committee " under the Chairmanship of Dr. G. M. Bennett.

It can now be reported that, with the help of a further generous grant from D.S.I.R. and money promised from Industry, funds are available which will enable the outstanding Indexes to be completed and the publication of Abstracts to be resumed while further arrangements are made. The January issue should be ready for distribution shortly and every effort will be made to catch up the time lost.

The schedule prices of Abstracts for 1953 were given on the publications form circulated at the beginning of the year. Fellows paying a separate subscription should indicate their requirements to the General Secretary as soon as possible. Those who have paid a joint subscription for 1953 should notify the Conjoint Chemical Office of their requirements. Fellows will be informed what additional subscription (if any) is due from them.

HARRISON MEMORIAL PRIZE.

In accordance with the Trust Deed governing the Harrison Memorial Fund, the Selection Committee, consisting of the Presidents of the Chemical Society, the Royal Institute of Chemistry, the Society of Chemical Industry, and the Pharmaceutical Society, will make an award of the Harrison Memorial Prize in December 1953, subject to the condition that the Selection Committee shall be of opinion that there is a candidate of sufficient distinction to warrant an award of the Prize.

The Prize, not exceeding 100 Guineas, will be awarded to the chemist of either sex, being a natural-born British subject and not at the time over thirty years of age, who, in the opinion of the Selection Committee, shall during the previous five years, have conducted the most meritorious and promising original investigations in Chemistry and published the results of those investigations in a scientific periodical or periodicals.

Applications, five copies of which must be submitted, should give the name of the applicant in (full); age (birth certificate should accompany the application); degrees (with name of University); any other qualifications and experience; titles of published papers (with co-authors names) including full references to publication; where research was carried out; testimonials and references; and any other particulars bearing on the application.

The Selection Committee is prepared to consider applications, nominations, or information as to candidates eligible for the Prize. Any such communication must be received by the President, The Chemical Society, Burlington House, Piccadilly, London, W.1, not later than Tuesday, December 1st, 1953. Candidates must not have attained the age of thirty years at this date.

MINUTES OF SCIENTIFIC MEETINGS

Minutes of a

SCIENTIFIC MEETING

held at Burlington House on June 4th, 1953, at 7.30 p.m.

The President, PROFESSOR C. K. INGOLD, D.Sc., F.R.S., was in the Chair.

MINUTES.

The Minutes of the Scientific Meeting held at Burlington House on May 7th, 1953, were read, and were confirmed and signed.

FORMAL ADMISSION OF FELLOWS.

The following were admitted Fellows of the Society: G. C. Speers, D. C. Havard, W. Kynaston, D. Ambrose, D. T. O'Rourke, P. Walker, J. V. Oubridge, R. B. Girdler, I. M. Lockhart, B. C. Eggleston, G. J. Smart, P. N. G. Rayner, C. H. Waxman, C. P. Pringle, C. T. Davies.

SCIENTIFIC COMMUNICATIONS.

The meeting was held to commemorate the present-day aspects of the work of Sir William Ramsay, President of the Society from 1907—9. After an introduction by the President, the following contributions were made :

" The Work of Sir William Ramsay in Relation to Nuclear Science and Technology." By J. S. Anderson.

" Recent Results of Researches on the Composition of the Stratosphere." By F. A. Paneth.

" Modern Light Sources." By H. G. Jenkins.

" Industrial Applications of the Rare Gases in Metallurgy." By L. C. Bannister.

" The Use of Helium in Diving." By H. J. Taylor.

LIST OF APPLICATIONS FOR FELLOWSHIP

(*Fellows wishing to lodge objection to the election of these candidates should communicate with the Honorary Secretaries within ten days of the date of publication of the* Journal *for July*, **1953**. *Such objections will be treated as confidential. The forms of application are available in the Library.*)

***Clark, Alastair George.** British. 129, Morningside Drive, Edinburgh, 10. Research Student, Edinburgh University. *Signed by :* E. L. Hirst, N. Campbell, T. R. Bolam.

***Haigh, Claude William,** M.A. (Cantab.). British. 419, Burton Road, Derby. Assistant Master, Stowe School. *Signed by :* E. S. Dewing, H. McCombie, F. W. Goddard.

***Haq, Qazi Abdul,** B.Sc. (Aligarh). Pakistani. W.D.C. Barracks, Bishopton, Renfrewshire. Explosives trainee at R.O.F., Bishopton. *Signed by :* J. Nicholson, D. S. Chisholm, J. Thomson.

Hartman, Leopold, M.Sc. (N.Z.), Chem. Eng. (Lwow). British. 288, The Terrace, Wellington, New Zealand. Research Chemist, D.S.I.R., Wellington. *Signed by :* S. N. Slater, W. S. Metcalf, I. M. Morice.

***Hinman, Richard L.**, A.B. (Columbia College), Ph.D. (Illinois). American. University Chemical Laboratory, Pembroke Street, Cambridge. Research Chemist. *Signed by :* A. W. Johnson, D. M. Brown, G. D. Fasman.

***Martin, David Maitland.** British. 3, Belmont Road, Mosman, Sydney, N.S.W., Australia. Research Student, Sydney University. *Signed by :* A. J. Birch, T. Iredale, J. Cymerman-Craig.

***Massy-Westropp,** Ralph Alan. British. Wesley College, Newtown, N.S.W., Australia. Research Student, Sydney University. *Signed by :* A. J. Birch, T. Iredale, J. Cymerman-Craig.

Nicholl, Leonard, M.S. and Ph.D. (New York). American. Kay Fries Chemicals Inc., West Haverstraw, New York, U.S.A. Research Director. *Signed by :* M. F. Carroll, R. G. Mason, B. T. D. Sully.

***Pearson, Arthur David,** B.Sc. (Dunelm). British. 67, Corporation Road, Darlington, Co. Durham. Research Student. *Signed by :* E. E. Aynsley, D. Holden, G. A. Swan.

***Powell, Kenneth William.** British. Newhaven, Hartshill, Oakengates, Shropshire. Research Student. *Signed by :* A. McGookin, F. M. Dean, R. J. S. Beer.

***Ray, Eric Walter,** B.Sc. (Lond.). British. 50, Osborne Road, London, N.13. Research Student. *Signed by :* D. H. Hey, S. H. Harper, Eric K. Rideal.

Reilly, Hugh Aidon, B.Sc. (Dunelm). British. 28, Watery Lane, Ulverston, Lancs. Industrial Chemist, Glaxo Laboratories Ltd., Ulverston. *Signed by :* H. W. Gurney, E. F. D. Winter, C. Jackson.

***Schleyer, Paul von Ragué,** A.B. (Princeton). American. 28, Gorham Street, Cambridge 38, Massachusetts, U.S.A. Research Student. *Signed by :* P. Smith, B. L. Shapiro, L. F. Fieser.

***Skoog, Ivan Hooglund,** M.S. (Northwestern). American. Department of Chemistry, Northwestern University, Evanston, Illinois, U.S.A. Research Student. *Signed by :* E. W. Stern, G. L. Oliver, H. L. Dryden.

***Tockman, Albert,** M.S. (Kentucky). American. Department of Chemistry, Northwestern University, Evanston, Illinois, U.S.A. Research Student. *Signed by :* H. L. Dryden, E. W. Stern, G. Lucas.

White, John Cosby, M.B. and Ch.B. (Birm.), M.R.C.S. and L.R.C.P. (Lond.). British. 34, Pottery Lane, London, W.11. Lecturer in Hæmatology, Postgraduate Medical School of London. *Signed by :* E. J. King, R. H. A. Plimmer, G. H. Beaven.

UNDER SPECIAL PROVISION APPERTAINING TO CANDIDATES RESIDENT ABROAD.

Bhavnani, Gulab Dharamdas, M.Sc. (Bombay). Indian. National Defence Academy. P.O. Clement Town, Dehra Dun, U.P., India. Professor of Chemistry and Life Sciences, National Defence Academy. *Signed by :* T. E. Wallis.

Vanderwerf, Calvin A., Ph.D. (Ohio State). American. Department of Chemistry, University of Kansas, Lawrence, Kansas, U.S.A. Professor of Chemistry. *Signed by :* W. E. McEwen.

Walborsky, Harry M., B.S. (City Coll. of New York), Ph.D. (Ohio State). American. The Florida State University, Chemistry Department, Tallahassee, Florida, U.S.A. Assistant Professor of Chemistry. *Signed by :* C. Grob, E. F. Jenny.

* Reduced Annual Subscription.

PAPERS RECEIVED

(List of papers received between May 23rd and June 15th, 1953.)

" Nucleotides. Part XXII. Syntheses of P^1P^2-diadenosine-5′ and P^1P^2-diuridine-5′ pyrophosphates." By S. M. H. CHRISTIE, D. T. ELMORE, G. W. KENNER, A. R. TODD, and F. J. WEYMOUTH.

" Triterpene resinols and related acids. Part XXVI. Olean-10 : 13(18)-dienol and oleana-10 : 18-dienol. The conversion of β-amyrin into germanicol." By J. M. BEATON, J. D. JOHNSTON, L. C. MCKEAN, and F. S. SPRING.

" The reactions of hexachlorodisilane with ammonium halides and trimethylamine hydrohalides." By C. J. WILKINS.

" The so-called ' 1-fluoro-3 : 4-dinitrobenzene.' " By H. SUSCHITZKY.

" The infra-red spectra of some inorganic phosphorus compounds." By D. E. C. CORBRIDGE and E. J. LOWE.

" Chemical bonds involving *d*-orbitals." By D. P. CRAIG, A. MACCOLL, R. S. NYHOLM, L. E. ORGEL, and L. E. SUTTON.

" Experiments on the synthesis of mycolipenic acid. Part I." By A. S. BAILEY, N. POLGAR, and SIR ROBERT ROBINSON.

" Homolytic aromatic substitution. Part IV. Partial rate factors for the phenylation of fluorobenzene, bromobenzene, and iodobenzene." By D. R. AUGOOD, J. I. G. CADOGAN, D. H. HEY, and GARETH H. WILLIAMS.

" *lin.*-Poly-*p*-xylylene. Part I. Intermediates and polymers of low molecular weight." By A. C. FARTHING.

" *lin.*-Poly-*p*-xylylene. Part II. The crystal structure of di-*p*-xylylene." By C. J. BROWN.

" *lin.*-Poly-*p*-xylylene. Part III. Preparation by the Wurtz reaction and investigation of structure." By C. J. BROWN and A. C. FARTHING.

" The crystal structure of di-*m*-xylylene." By C. J. BROWN.

" Alkylperoxy-radicals. Part I. Reactions with 2 : 4 : 6-trialkylphenols." By A. F. BICKEL and E. C. KOOYMAN.

" The rearrangement of some dibromopropyl esters." By W. G. H. EDWARDS and R. HODGES.

" Urea and related compounds. Part III. Alternative syntheses of sulphenylureas." By FREDERICK KURZER.

" The course of the Perkin coumarin synthesis. Part I Prior acylation." By MALCOLM CRAWFORD and J. A. MAGILL

" Some preparative uses of benzylpenicillinic ethoxyformic anhydride." By R. L. BARNDEN, R. M. EVANS, J. C. HAMLET, B. A. HEMS, A. B. A. JANSEN, M. E. TREVETT, and G. B. WEBB.

" Cinnolines. Part XXXII. Some 3-aryl-4-hydroxycinnolines." By D. W. OCKENDEN and K. SCHOFIELD.

" Cinnolines. Part XXXIII. Further experiments on the effects of heterocyclic nuclei as substituents in the Widman–Stoermer synthesis." By A. J. NUNN and K. SCHOFIELD.

" Some alkyl-5-azanaphtha-1 : 4-quinones." By R. LONG and K. SCHOFIELD.

" *iso*Oxazolones. Part IV. The bromination of arylaminomethylene*iso*oxazolidones. A new selective anion precipitant." By G. SHAW.

" The colouring matters of the bark of *Rhamnus alaternus L.*" By LINDSAY H. BRIGGS, F. E. JACOMBS, and G. A. NICHOLLS.

" The configuration of noradrenaline and adrenaline." By C. E. DALGLIESH.

" The structure of digoxigenin." By D. A. H. TAYLOR.

" Sesquiterpenoids. Part III. The stereochemistry of caryophyllene." By A. AEBI, D. H. R. BARTON, and A. S. LINDSEY.

" Studies in mycological chemistry. Part I. Flaviolin, 2(or 3) : 5 : 7-trihydroxy-1 : 4-naphthaquinone, a metabolic product of *Aspergillus citricus* (Wehmer) Mosseray." By B. D. ASTILL and JOHN C. ROBERTS.

" The thermochemistry of organo-boron compounds. Part II. Tri-*n*-butylboron, and the di-*n*-butylboron halides." By H. A. SKINNER and T. F. S. TEES.
" The preparation and structure of some derivatives of 3-hydroxypyrrole." By J. DAVOLL.
" Fluorine-substituted phenylhydrazines." By H. SUSCHITZKY.
" The kinetics of the reduction by titanous chloride of nitrobenzene and its substitution products." By S. A. NEWTON, JUN., F. J. STUBBS, and SIR CYRIL HINSHELWOOD.
" The structure of the glycerinositophosphatide of ground nut." By T. MALKIN and A. G. POOLE.
" Triad prototropic systems. Part II. The effect of groups on the mobility of the azomethine-carboxylic acids." By F. G. BADDAR and ZAKY ISKANDER.
" Triad prototropic systems. Part III. The effect of substituents on the mobility of the azomethine system." By F. G. BADDAR and ZAKY ISKANDER.
" Addition of free radicals to unsaturated systems. Part IV. The direction of radical addition to hexafluoropropene." By R. N. HASZELDINE.
" The stabilities of complexes formed by some divalent transition metals with *N*-alkylethylenediamines." By H. IRVING and J. M. M. GRIFFITHS.
" Solutions in sulphuric acid. Part XIV. Cryoscopic measurements on some unsaturated aromatic ketones and aldehydes." By R. J. GILLESPIE and J. A. LEISTEN.
" Solutions in sulphuric acid. Part XV. The sulphonation of some unsaturated aromatic ketones in sulphuric acid." By R. J. GILLESPIE and J. A. LEISTEN.
" The halogenation of β-naphthylamine and its derivatives." By F. BELL.
" Adaptive behaviour of coliform bacteria to certain sugars." By N. M. MIMS and SIR CYRIL HINSHELWOOD.
" Glycine peptides. Part II. The polymerization of piperazine-2 : 5-dione at 140°." By A. B. MEGGY.
" The synthesis of fluorocitric acid." By D. E. A. RIVETT.
" Reactions of methazonic acid. Part IV. Further experiments with 3-amino-4-arylquinolines." By D. W. OCKENDEN and K. SCHOFIELD.
" Indoles. Part IV. Synthetical applications of the oxidative fission of the indole $C_{(2)}$–$C_{(3)}$ bond." By D. W. OCKENDEN and K. SCHOFIELD.
" Nucleophilic displacement reactions in aromatic systems. Part II. Kinetics of the reactions of chloronitropyridines and chloro-2 : 4-dinitrobenzene with 3- and 4-picolines." By E. A. S. CAVELL and N. B. CHAPMAN.
" Unusual reactions of thallium. Part II. Thallous ethoxide as a catalyst in the oxidation of the aromatic acyloins by nitrobenzene." By L. P. MCHATTON and M. J. SOULAL.
" Some photochemical reactions between quinones and hydrocarbons." By R. F. MOORE and WILLIAM A. WATERS.
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" Reactions of fluorocarbon radicals. Part XI. Synthesis and some reactions of trifluoromethanethiol and trifluoromethanesulphenyl chloride." By R. N. HASZELDINE and J. M. KIDD.
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IMPERIAL CHEMICAL INDUSTRIES, LTD. *Butterwick Research Laboratories.* A discussion on co-ordination chemistry held September, 1950. Report prepared by JOSEPH CHATT and RALPH GEORGE WILKINS. Welwyn 1951. pp. iii + 97. ill. [Two copies.] (*Recd.* 27/5/53.) From the Editors.

PHARMACEUTICAL FORMULAS, being " The Chemist & Druggist " book of formulas . . . 12th edition. P.F. Vol. 1. London 1953. pp. xv + 1139. (*Reference.*) 37*s.* 6*d.* From the Publishers: " The Chemist & Druggist."

SOUTH AFRICA, UNION OF. *Council for Scientific and Industrial Research.* Research Review. Vol. 1, No. 3, etc. Pretoria 1951+. (*Reference.*) From the Council.

B. *Pamphlets.*

BRITISH COKE RESEARCH ASSOCIATION. 5th Conference, held 26th June, 1952. [London 1953.] pp. v + 30. ill. From the Association.

DHAR, NIL RATAN. Value of organic matter and calcium phosphate in nitrogen fixation in soil. Allahabad 1952. pp. 55. (From *Business Matter*, 1952, of the National Academy of Sciences, India.)

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REAL SOCIEDAD ESPAÑOLA DE FÍSICA Y QUÍMICA. Cincuenta años de física y de química en España 1903—1953. Discurso . . . . por MANUEL LORA TAMAYO. Madrid 1953. pp. 27.

SOCIETY OF CHEMICAL INDUSTRY. Problems arising from the use of chemicals in food. London 1952. pp. [68]. (From *Chemistry and Industry*, 1951—52.) From the Society.

II. *By Purchase*

ACTA METALLURGICA. Vol. 1, etc. Toronto 1953+. (*Reference.*) Toronto Univ. Press. $12 per annum.

AMERICAN VISCOSE CORPORATION. *Textile Research Department.* Rayon technology (including acetate). Handbook for textile mills. 2nd edition. New York 1953. pp. vii + 344. ill. McGraw Hill. $7. (*Recd.* 13/6/53.)

AUDRIETH, LUDWIG FREDERICK, and KLEINBERG, JACOB. Non-aqueous solvents; applications as media for chemical reactions. New York 1953. pp. xii + 284. ill. Wiley. $6.75. (*Recd.* 13/6/53.)

BABBITT, HAROLD E. Sewerage and sewage treatment. 7th edition. New York 1953. pp. ix + 674. ill. Wiley. $8. (*Recd.* 5/6/53.)

BARNARD, G. P. Modern mass spectrometry. London 1953. pp. 326. ill. (Physics in Industry.) Institute of Physics. 50*s.* (*Recd.* 29/5/53.)

BOER, JAN HENDRIK DE. The dynamical character of adsorption. Oxford 1953. pp. xv + 239. ill. Clarendon Press. 30*s.* (*Recd.* 29/5/53.)

DARKEN, LAWRENCE S., and GURRY, ROBERT W. Physical chemistry of metals; with a collection of problems by MICHAEL B. BEVER. London 1953. pp. ix + 535. ill. McGraw-Hill. 61*s.* (*Recd.* 29/5/53.)

FREY-WYSSLING, ALBERT. Submicroscopic morphology of protoplasm. 2nd English edition. Amsterdam 1953. pp. viii + 411. ill. Elsevier. 55*s.* (*Recd.* 29/5/53.)

GAYDON, A. G., and WOLFHARD, H. G. Flames; their structure, radiation and temperature. London 1953. pp. xi + 340. ill. Chapman & Hall. 55*s.* (*Recd.* 5/6/53.)

HERDAN, GUSTAV. Small particle statistics; an account of statistical methods for the investigation of finely divided materials, with a guide to the experimental design of particle size determinations by MERVYN LESLIE SMITH. Amsterdam 1953. pp. xxiii + 520. ill. Elsevier. 70*s.* (*Recd.* 29/5/53.)

INTERNATIONAL CONGRESS OF BIOCHEMISTRY. 2nd, Paris, 1952. Compte rendu. Paris 1953. pp. 215. ill. (*Reference.*) Masson. 1,500 *frs.*

INTERNATIONAL SYMPOSIUM ON CHEMICAL MICROBIOLOGY. 1st, Rome, 1951. Microbial growth and its inhibition. Genève 1952. pp. iv + 285. ill. (World Health Organization Monograph Series, No. 10.) W.H.O. 15*s.* (*Recd.* 29/5/53.)

JACOBS, MORRIS BORIS, and SCHEFLAN, LEOPOLD. Chemical analysis of industrial solvents. New York 1953. pp. xxii + 501. ill. (Chemical Analysis, Vol. 7.) Interscience. $10. (*Recd.* 29/5/53.)

MINER, CARL S., and DALTON, N. N. *Editors.* Glycerol. New York 1953. pp. xiv + 460. ill. (American Chemical Society Monograph Series, No. 117.) Reinhold. $12. (*Recd.* 27/5/53.)

MÜNZINGER, WALTER M. Kunstleder-Handbuch; Herstellung und Eigenschaften von Kunstleder und lederähnlichen Werkstoffen. 2nd edition. Berlin 1950. pp. [vi] + 372. ill. Wilhelm Pansegrau. *DM* 30. (*Recd.* 6/6/53.)

NUFFIELD RESEARCH GROUP IN EXTRACTION METALLURGY. The physical chemistry of melts. A symposium on the nature of molten slags and salts held . . . 20th February, 1952. London 1953. pp. 106. ill. Institution of Mining and Metallurgy. 15*s.* (*Recd.* 29/5/53.)

RADLEY, JACK AUGUSTUS. Starch and its derivatives. 3rd edition. Vol. 1. London 1953. pp. xi + 510. ill. Chapman & Hall. 65*s.* (*Recd.* 29/5/53.)

RICCI, JOHN ETTORE. Hydrogen ion concentration; new concepts in a systematic treatment. Princeton 1952. pp. xxxvi + 460. ill. Princeton Univ. Press. $10. (*Recd.* 13/6/53.)

RUDDLE, R. W. The physical chemistry of copper smelting. London 1953. pp. 156. Institution of Mining and Metallurgy. 20*s.* (*Recd.* 29/5/53.)

TAYLOR, DENIS. The measurement of radio isotopes. London 1951. pp. viii + 118. ill. (Methuen's Monographs on Physical Subjects.) Methuen. 6*s.* 6*d.* (*Recd.* 29/5/53.)

TINTOMETER, LTD. A handbook of colorimetric chemical analytical methods for industrial, research and clinical laboratories developed for use with the Lovibond comparator. Salisbury [1953]. pp. 119. ill. (*Reference.*) The Company. 15*s.*

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Birmingham.	E. J. Bourne, B.Sc., Ph.D., Department of Chemistry, The University, Edgbaston, Birmingham, 15.
Bristol.	F. H. Pollard, B.Sc., Ph.D., A.R.I.C., Chemistry Department, The University, Woodland Road, Bristol.
Cambridge.	R. N. Haszeldine, B.Sc., Ph.D., University Chemical Laboratory, Pembroke Street, Cambridge.
Canada.	W. D. McFarlane, M.A., Ph.D., The Laboratories, The Canadian Breweries Ltd., 496, Queen Street East, Toronto, 2, Canada.
Ceylon.	M. U. S. Sultanbawa, B.Sc., Ph.D., A.R.I.C., Department of Chemistry, The University, Colombo, Ceylon.
Edinburgh.	T. R. Bolam, D.Sc., Chemistry Department, King's Buildings, West Mains Road, Edinburgh.
Exeter.	K. Schofield, B.Sc., Ph.D., Department of Chemistry, Washington Singer Laboratories, Prince of Wales' Road, Exeter.
Glasgow.	F. D. Gunstone, B.Sc., Ph.D., Chemistry Department, The University, Glasgow, W.2.
Hull.	W. B. Orr, D.Sc., Ph.D., Chemistry Department, University College, Hull.
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Leeds.	P. A. Briscoe, B.Sc., A.R.I.C., Organic Chemistry Department, the University, Leeds, 2.
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,,	D. W. Broad, Ph.D., A.R.I.C., Imperial Chemical Industries, Ltd., Research Department, Widnes Laboratory, Widnes.
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South Wales.	K. W. Sykes, M.A., B.Sc., D.Phil., Department of Chemistry, University College, Singleton Park, Swansea.

PROCEEDINGS

OF THE

CHEMICAL SOCIETY

SCIENTIFIC MEETINGS DURING OCTOBER, 1953

LONDON.

Thursday, October 15th, 1953, at 7.30 p.m.

Tilden Lecture, **The Mechanism of Reactions between Gases and Solids,** by Dr. J. S. Anderson, F.R.S., to be held in the Lecture Theatre of the Royal Institution, Albemarle Street, London, W.1.

ABERDEEN.

Friday, October 23rd, 1953, at 7.30 p.m.

Lecture, **Structure, Stereochemistry and Inclusion Compounds of Some Phenol Derivatives,** by Professor W. Baker, M.A., D.Sc., F.R.S. Joint meeting with the Royal Institute of Chemistry and the Society of Chemical Industry, to be held at Robert Gordon's Technical College.

BIRMINGHAM.

Friday, October 23rd, 1953, at 4.30 p.m.

Lecture, **Analytical Errors : Heinous and Otherwise,** by Dr. T. B. Smith, A.R.C.S. Joint meeting with Birmingham University Chemical Society, to be held in the Chemistry Department, The University.

BRISTOL.

Thursday, October 1st, 1953, at 7 p.m.

Lecture, **The Changing Pattern of Plant Design in the Basic Chemical Industries,** by Mr. Stanley Robson, M.Sc., D.I.C., F.R.I.C. Joint meeting with the Royal Institute of Chemistry and the Society of Chemical Industry, to be held in the Department of Chemistry, The University.

Thursday, October 15th, 1953, at 7 p.m.

Lecture, **Synthesis of Simple Peptides,** by Professor F. E. King, M.A., Ph.D. Joint meeting with the Royal Institute of Chemistry and the Society of Chemical Industry, to be held in the Department of Chemistry, The University.

CAMBRIDGE.

Friday, October 30th, 1953, at 8.30 p.m.

Lecture, **The Polymerisation of Sulphur,** by Professor G. Gee, F.R.S. Joint meeting with the University Chemical Society, to be held in The Chemical Laboratory, Pembroke Street.

EDINBURGH.

Thursday, October 15*th*, 1953, *at* 7.30 *p.m.*

Joint meeting with the Royal Institute of Chemistry and the Society of Chemical Industry, to be held at the North British Station Hotel.

GLASGOW.

Friday, October 23*rd*, 1953, *at* 3.30 *p.m.*

Lecture, **Fluorescence of Solutions,** by Dr. E. J. Bowen, F.R.S. Joint meeting with The Andersonian Chemical Society and The Alchemists's Club, to be held at The Royal Technical College.

IRISH REPUBLIC.

Wednesday, October 21*st*, 1953, *at* 7.45 *p.m.*

Lecture, **Phosphates in Biochemical Reactions,** by Dr. A. K. Mills. To be given in the Chemistry Department, University College, Upper Merrion Street, Dublin.

LIVERPOOL.

Thursday, October 22*nd*, 1953, *at* 5 *p.m.*

Lecture, **Reaction Mechanism and Molecular Geometry,** by Professor C. W. Shoppee, D.Sc. Joint meeting with the Royal Institute of Chemistry, Society of Chemical Industry, British Association of Chemists, and the University Chemical Society, to be held in the Chemistry Lecture Theatre, The University.

MANCHESTER.

Thursday, October 22*nd*, 1953, *at* 6.30 *p.m.*

Meeting for Reading of Original Papers. To be held in Room E.17, College of Technology.

NEWCASTLE AND DURHAM.

Friday, October 23*rd*, 1953, *at* 4 *p.m.*

Meeting for Reading of Original Papers. To be held in the Chemistry Building, King's College, Newcastle-on-Tyne.

NORTHERN IRELAND.

Tuesday, October 13*th*, 1953, *at* 7.15 *p.m.*

Lecture, **Recent Research on Tin and its Compounds,** by Dr. E. S. Hedges, F.I.M., F.R.I.C. Joint meeting with the Society of Chemical Industry, to be held in the Agricultural Lecture Theatre, Queen's University, Belfast.

Thursday, October 29*th*, 1953, *at* 7.45 *p.m.*

Lecture, **The Comparative Chemistry of Carbon and Silicon,** by Professor E. D. Hughes, D.Sc., F.R.I.C., F.R.S. To be given in the Chemistry Lecture Theatre, Queen's University, Belfast.

NOTTINGHAM.

Thursday, October 29th, 1953, at 4.45 p.m.

Lecture, **Allene Chemistry,** by Professor E. R. H. Jones, D.Sc., F.R.S. Joint meeting with the University Chemical Society, to be held at the University.

ST. ANDREWS AND DUNDEE.

Friday, October 16th, 1953, at 5.15 p.m.

Lecture, **Chemistry at St. Andrews : a Historical Survey,** by Professor J. Read, F.R.S. To be given in the Chemistry Department, United College, St. Andrews. Arranged by the University Chemical Society. (All Fellows invited.)

Thursday, October 22nd, 1953, at 5.15 p.m.

Lecture, **Structure, Stereochemistry and Inclusion Compounds of Some Phenol Derivatives,** by Professor W. Baker, M.A., D.Sc., F.R.S. To be given in the Chemistry Department, University College, Dundee. Arranged by the Chemistry Department. (All Fellows invited.)

SHEFFIELD.

Thursday, October 29th, 1953, at 7.30 p.m.

Lecture, **Structure, Stereochemistry and Inclusion Compounds of some Phenol Derivatives,** by Professor W. Baker, M.A., D.Sc., F.R.S. Joint meeting with the University Chemical Society, to be held in the Chemistry Lecture Theatre, The University.

SOUTHAMPTON.

Tuesday, October 13th, 1953, at 7 p.m.

Lecture, **The Manufacture of Sulphuric Acid from Anhydrite,** by Dr. J. S. Dunn, M.A., A.R.I.C. Joint meeting with the Portsmouth and District Chemical Society, to be held at the Municipal College, Anglesea Road, Portsmouth.

SOUTH WALES

Monday, October 26th, 1953, at 5.30. p.m.

Lecture, **Methods of Measuring Reaction Velocities in Solution,** by Mr. R. P. Bell, M.A., F.R.S. To be given in the Chemistry Department, University College of Cardiff.

OFFICIAL ANNOUNCEMENTS

HER MAJESTY QUEEN ELIZABETH II—PATRON.

The following Address was sent to The Queen on June 2nd, 1953:

TO HER MOST EXCELLENT MAJESTY
QUEEN ELIZABETH THE SECOND

May it please Your Majesty,

The President, Council, and Fellows of The Chemical Society, Your Majesty's loyal and dutiful subjects, present their humble duty to Your Majesty and their faithful allegiance to your Throne and Person and unite in offering their wholehearted congratulations on the occasion of the Coronation of Your Most Gracious Majesty.

By graciously consenting to become Patron of The Chemical Society, Your Majesty has shown an interest in the progress of science that is recognised with grateful appreciation by all Fellows of the Society.

On this felicitous occasion The Chemical Society desires to express the fervent prayer that Your Majesty may be vouchsafed long life to reign over a prosperous and united people.

Signed and sealed on behalf of The Chemical Society this second day of June, One Thousand Nine Hundred and Fifty-Three.

C. K. INGOLD, *President*
W. A. AKERS, *Treasurer*
H. BURTON, E. D. HUGHES, L. E. SUTTON } *Honorary Secretaries*

The following reply was received from the Home Secretary:

HOME OFFICE,
WHITEHALL.
24th June, 1953.

Sir,

I have had the honour to lay before The Queen the Loyal and Dutiful Address of the President, Council and Fellows of the Chemical Society on the occasion of Her Majesty's Coronation, and I have it in Command from The Queen to convey to you Her Majesty's warm thanks for the expressions of loyalty and devotion which it contains.

I am,
Sir,
Your obedient Servant,
(*Signed*) DAVID MAXWELL FYFE.

DEATHS.

The Council regrets to announce the deaths of the following Fellows:

	Elected.	Died.
Percy James Ferris (Rutherglen)	June 18th, 1902.	April 21st, 1953.
George Rudd Thompson (Newport)	May 4th, 1893.	Nov. 3rd, 1948.
Henry Stow Young (Tain)	Feb. 21st, 1895.	Jan. 20th, 1952.

CONGRATULATIONS.

The President has conveyed the congratulations of the Society to the following Fellows who completed sixty years of Fellowship on June 15th, 1953:

John Watson Napier (Edinburgh).
Henry Thomas Sorrell (Southampton).

and to the following who completed fifty years of Fellowship on June 11th, 1953 :

Colin Noel Bennett (Lydford).
Thomas Campbell (Hampton-on-Thames).
John Howard Linday (Nottingham).
John Christopher Mann (Birmingham).
George Marshall Norman (Sutton).
James Cruickshank Smith (Chester).

ELECTION OF NEW FELLOWS.

The following 35 candidates were elected Fellows of the Society on July 6th, 1953 :

Peter Frederic Ashworth.
John Baillie Barbour.
Brian Alfred Bolto.
Duncan Thorburn Burns.
John Edward Connett.
Donald Keir Dougall.
Zbigniew Ludwik Ernst.
William Farquharson Faulds.
Thomas Brian Fielden.
Howard Montgomery Fitch.
Alan Carl Fogerty.
Milton Paul Gordon.
John William Gramshaw.
Anthony Holland.
Keith Scott Spencer Lawrence.
John Barry Lee.
Roy Littlewood.
Michael John Lyons.
Shunsuke Murahashi.
Allan Lloyd Odell.
Samuel Francis Desmond Orr.
William Crawford Paterson.
Ernest Albert Raynham.
Anthony Reveley.
John Lewis Richards.
Bryan Rigby.
Mohammad Salahud-Din.
Arthur George Sansome.
Edward Ervin Smissman.
Yair Sprinzak.
Julian M. Sturtevant.
Venkateswarier Subramanian.
Norman Michael Waldron.
John Dennis White.
Harry D. Zook

RESEARCH FUND.

A meeting of the Research Fund Committee will be held in November next. All persons who have received grants, and whose accounts have not been declared closed by the Council, are informed that reports must be received by the Society not later than November 2nd, 1953.

Applications for grants, to be made on forms obtainable from the General Secretary, must be received on or before November 14th, 1953. Applications from Fellows will receive prior consideration.

Attention is drawn to the fact that the income arising from the donation of the Worshipful Company of Goldsmiths is principally devoted to the encouragement of research in inorganic and metallurgical chemistry, and that the income from the Perkin Memorial Fund is to be applied to investigations relating to problems connected with the coal-tar and allied industries.

BRITISH ABSTRACTS.

Fellows will be aware that the issue of British Abstracts has been resumed. There is urgent need for many more abstractors of journals of pure and applied chemistry, especially in organic chemistry, and for those with a knowledge of foreign languages, especially Russian, Polish, Italian, Spanish, Portuguese, Dutch, and the Scandinavian languages. An appeal is made to those willing to help and so discharge what should be regarded as an obligation to the profession to provide one of the tools with which chemists can work. Those interested should communicate with the Editor, Bureau of Abstracts, Colquhoun House, Broadwick Street, London, W.1.

LIST OF APPLICATIONS FOR FELLOWSHIP

(Fellows wishing to lodge objection to the election of these candidates should communicate with the Honorary Secretaries within ten days of the date of publication of the Journal *for August, 1953. Such objections will be treated as confidential. The forms of application are available in the Library).*

***Bennett, Frank William,** B.A. and Ph.D. (Cantab.). British. 10, Lewsey Road, Luton. Chemist, National Titanium Pigments Ltd., Luton. *Signed by:* R. N. Haszeldine, H. J. Emeléus, R. L. Martin.

***Blau, Karl Hermann Friedrich,** B.Sc. (Lond.). British. 80, Clare Road, Maidenhead. Chemist. *Signed by:* J. Watson, S. G. Waley, D. G. Ballard.

Carver, Gordon Ivor, B.Sc. (Lond.), A.R.I.C. British. 43, Coalway Road, Wolverhampton. Chemist and Bacteriologist, Wolverhampton Corporation Water Undertaking. *Signed by:* M. E. D. Windridge, D. W. Parkes, E. J. Amies.

***Cox, Leslie Richard,** B.Sc. (Lond.). British. 30, Dorian Road, Hornchurch. National Serviceman, R.A.F. *Signed by:* S. H. Harper, K. C. Sleep, A. L. Green.

***Crisp, Peter Clair.** British. 20 Salisbury Road, Norwich. Research Student, University of Nottingham. *Signed by:* C. C. Addison, M. W. Partridge, J. C. Roberts.

***Critchlow, Alan,** B.Sc. and Ph.D. (Sheffield). British. 60, Washington Road, Sheffield, 11. Chemist, Ministry of Supply. *Signed by:* H. J. V. Tyrrell, J. Cast, T. S. Stevens.

Dreiding, Andre S., B.S. and M.A. (Columbia), Ph.D. (Michigan). American. Detroit Institute of Cancer Research, 4811 John R. Street, Detroit, Michigan, U.S.A. Research Associate, Detroit Institute of Cancer Research, and Assistant Professor, Department of Chemistry, Wayne University. *Signed by:* D. H. R. Barton, J. Dreiding, G. F. Laws.

***Figgis, Brian N.,** M.Sc. (Sydney). Australian. 10, Hammond Avenue, Normanhurst, N.S.W., Australia. Research Chemist. *Signed by:* R. S. Nyholm, G. W. K. Cavill, L. N. Short.

Flengas, Spyridon, B.Sc. (Athens). Greek. 43, Ladbroke Square, W.11. Research Student, King's College. *Signed by:* E. K. Rideal, M. C. Bennett, J. Boulton.

George, Philip, M.A. and Ph.D. (Cantab.). British. 78, Castle Street, Cambridge. Assistant Director of Research, Department of Colloid Science, Cambridge. *Signed by:* A. W. Johnson, A. R. Todd, P. Maitland.

***Kende, Andrew Steven,** B.A. (Chicago). American. 2315, E. Railroad Avenue, Evanston, Illinois, U.S.A. Resident Fellow, Harvard University. *Signed by:* W. D. Ollis, J. E. Hancock, J. D. McCollum.

McKay, Alan, A.R.I.C. British. 3, Rydal Avenue, Grosvenor Road, Ashton on Mersey, Sale. Senior Assistant Chemist, Mersey River Board. *Signed by:* L. Klein, L. Balmforth, D. Hunter.

***MacLennan, George,** B.Sc. (Edinburgh). British. Red House, Burnside, Dingwall, Ross-shire. Research Student. *Signed by:* T. R. Bolam, M. Ritchie, D. Taylor.

***Morgan, David Thomas George,** B.A. (Oxon.). British. 142, Godolphin Road, Slough. Research in Royal Naval Scientific Service. *Signed by:* R. H. Purcell, G. R. Davies, E. J. Bowen, H. W. Thompson.

***Morton, Janet Eileen,** M.Sc. (Otago). New Zealand. 111, Priory Road, West Hampstead, N.W.6. Scientific Officer, British Baking Industries Research Association, Chorley Wood. *Signed by:* S. N. Slater, A. D. Campbell, J. Murray.

***Payne, Donald,** B.Sc. (Lond.). British. 82, Hastings Road, Maidstone. Analytical Chemist, Burroughs Wellcome and Co. Ltd., Dartford. *Signed by:* G. E. Foster, J. S. Coleman, A. C. Caws.

***Porte, Andrew Lawrie,** B.Sc. (Glasgow). British. 1, Westwood Avenue, Ayr. Research Student. *Signed by:* F. D. Gunstone, J. C. Speakman, J. D. Loudon.

***Quadir, Syed Jamal,** M.Sc. (Dacca). Pakistani. Department of Chemistry, Dacca University, Ramna, Dacca, East Pakistan. Senior Research Chemist. *Signed by:* M. H. Khundkar, K. Ahmad, A. Karim.

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Smith, Marjorie, B.Sc. (Lond.). British. Mascot, Links View Avenue, Brockham, Betchworth. Research Chemist. *Signed by:* S. U. Ruff, F. P. Doyle, J. D. A. Johnson.

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"Alkyl–oxygen fission in carboxylic esters. Part XII. *o*-Methoxy-α-methylbenzyl and α-1-naphthylbenzyl compounds. The relative effect of the introduction of *ortho*- and of *para*-methoxyl groups into benzyl compounds." By R. E. DABBY, A. G. DAVIES, J. KENYON, and B. J. LYONS.

"Chemistry of the vitamin B_{12} group. Part II. Synthesis of 5 : 6-dimethyl-1-α-D-ribofuranosylbenziminazole." By A. W. JOHNSON, G. W. MILLER, J. A. MILLS, and A. R. TODD.

"The fatty acid compositions of the seed oils of *Licania rigida* (Oiticica) and *Parinarium sherbroense* (Po-Yoak)." By A. MENDELOWITZ.

"Studies of *Aspergillus niger*. Part I. The structure of the polyglucosan synthesised by *Aspergillus niger* 152." By S. A. BARKER, E. J. BOURNE, and M. STACEY.

"Anhydrides of some 9 : 10-dihydroanthracene-9 : 10-*cis*-dicarboxylic acids." By A. H. BECKETT, R. G. LINGARD, and B. A. MULLEY.

"Studies of organic fluorine compounds. Part I. Some esters of monofluoroacetic acid and related compounds." By ERNST D. BERGMANN and I. BLANK.

"A method of iodination." By K. T. POTTS.

"Diacid bases. Part I." By F. C. COPP.

"Syntheses of methyl ethers of fructose." By E. L. HIRST, W. E. A. MITCHELL, E. E. PERCIVAL, and (the late) E. G. V. PERCIVAL.

"Dimerisation of 1-methyl*cyclo*hexene by formic or acetic acid containing perchloric acid." By GEORGE F. BLOOMFIELD.

"Heterocyclic fluorine compounds. Part I. Monofluoro-1 : 2 : 3 : 4-tetrahydrocarbazoles and monofluorocarbazoles." By F. L. ALLEN and H. SUSCHITZKY.

"Infra-red absorptions of the *iso*cyanate group." By W. H. T. DAVISON.

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"Organic fluoro-compounds. Part VII. Some 2-trihalogenocoumarones." By W. B. WHALLEY.

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"Pyrimidines. Part VI. 5-Bromopyrimidine." By J. F. W. MCOMIE and I. M. WHITE.

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—— —— —— No. 3. Le cycle tricarboxylique. Paris 1952. pp. 107 ill. (*Reference.*)

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—— —— —— No. 6. Le mode d'action des antibiotiques. Paris 1952. pp. 124. ill. (*Reference.*)

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LOCAL REPRESENTATIVES OF THE CHEMICAL SOCIETY

Aberdeen.	R. H. Thomson, Ph.D., F.R.I.C., Chemistry Department, The University, Old Aberdeen.
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Exeter.	K. Schofield, B.Sc., Ph.D., Department of Chemistry, Washington Singer Laboratories, Prince of Wales' Road, Exeter.
Glasgow.	F. D. Gunstone, B.Sc., Ph.D., Chemistry Department, The University, Glasgow, W.2.
Hull.	W. B. Orr, D.Sc., Ph.D., Chemistry Department, University College, Hull.
India.	Sir Shanti S. Bhatnager, O.B.E., D.Sc., F.R.S., Secretary, Ministry of Natural Resources and Scientific Research, New Delhi, India.
Irish Republic.	V. C. Barry, D.Sc., F.R.I.C., Medical Research Council of Ireland, The Laboratories, Trinity College, Dublin.
Leeds.	P. A. Briscoe, B.Sc., A.R.I.C., Organic Chemistry Department, the University, Leeds, 2.
Liverpool.	A. K. Holliday, B.Sc., Ph.D., Department of Physical and Inorganic Chemistry, The University, Liverpool.
,,	D. W. Broad, Ph.D., A.R.I.C., Imperial Chemical Industries, Ltd., Research Department, Widnes Laboratory, Widnes.
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,,	M. A. T. Rogers, B.Sc., Ph.D., A.R.I.C., Imperial Chemical Industries, Ltd., Hexagon House, Blackley, Manchester.
Newcastle and Durham.	G. A. Swan, B.Sc., Ph.D, F.R.I.C., Department of Chemistry, King's College, Newcastle-on-Tyne, 1.
New Zealand.	Professor S. N. Slater, M.Sc., D.Phil., A.R.I.C., Chemistry Department, Victoria University College, Wellington, New Zealand.
Northern Ireland.	R. G. R. Bacon, Ph.D., A.R.C.S., Chemistry Department, Queen's University, Belfast.
North Wales.	J. E. McKail, Ph.D., Department of Chemistry, University College of North Wales, Bangor.
Nottingham.	C. C. Addison, D.Sc., Ph.D., F.R.I.C., Chemistry Department, The University, University Park, Nottingham.
Oxford.	H. M. N. H. Irving, M.A., D.Phil., F.R.I.C., Inorganic Chemistry Laboratory, South Parks Road, Oxford.
Pakistan.	M. I. D. Chughtai, M.Sc.Tech., Ph.D., A.R.I.C., Punjab University Institute of Chemistry, The Mall, Lahore, Pakistan.
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Sheffield.	H. J. V. Tyrrell, M.A., B.Sc., Chemistry Department, The University, Sheffield, 10.
South Africa.	Professor W. Pugh, Ph.D., B.Sc., F.R.I.C., Chemistry Department, University of Cape Town, Rondebosch, S. Africa.
Southampton.	N. B. Chapman, M.A., Ph.D., A.R.I.C., Department of Chemistry, The University, Southampton.
South Wales.	K. W. Sykes, M.A., B.Sc., D.Phil., Department of Chemistry, University College, Singleton Park, Swansea.

PROCEEDINGS
OF THE
CHEMICAL SOCIETY

SCIENTIFIC MEETINGS DURING NOVEMBER, 1953

LONDON.

Thursday, November 5th, 1953, *at* 7.30 *p.m.*

Tilden Lecture, **Aromatic Character in Seven-membered Ring Systems,** by Dr. A. W. Johnson. To be given in the Lecture Theatre, Imperial College of Science and Technology, South Kensington, S.W.7.

Thursday, November 19th, 1953, *at* 7.30 *p.m.*

Centenary Lecture, **Some Applications of the Separation of Large Molecules and Colloidal Particles,** by Professor A. Tiselius, Sc.D., M.D. To be given in the Lecture Theatre, The Institution of Civil Engineers, S.W.1.

ABERDEEN.

Friday, November 20th, 1953, *at* 7.30 *p.m.*

Lecture, **The Production, Fabrication, and Properties of Titanium,** by Mr. N. P. Inglis. Joint Meeting with the Royal Institute of Chemistry and the Society of Chemical Industry. To be held at Robert Gordon's Technical College, Aberdeen.

BIRMINGHAM.

Friday, November 20th, 1953, *at* 4.30 *p.m.*

Centenary Lecture, **Some Applications of the Separation of Large Molecules and Colloidal Particles,** by Professor A. Tiselius, Sc.D., M.D. To be given in the Chemistry Department, The University.

BRISTOL.

Thursday, November 5th, 1953, *at* 7 *p.m.*

Lecture, **Some Aspects of the Work at Rothamsted,** by Sir William Ogg, M.A., Ph.D. Joint meeting with the Royal Institute of Chemistry and the Society of Chemical Industry. To be held in the Department of Chemistry, The University.

Thursday, November 12th, 1953.

Social Evening and Film Show. Held jointly with the Royal Institute of Chemistry and the Society of Chemical Industry at the Grand Hotel.

Thursday, November 19th, 1953, *at* 7 *p.m.*

Lecture, **Mechanism of Detergent Action,** by Professor N. K. Adam, Sc.D., F.R.S. Joint meeting with the Royal Institute of Chemistry and the Society of Chemical Industry. To be held in the Department of Chemistry, The University.

Thursday, November 26th, 1953, at 7 p.m.

Joint meeting with the Royal Institute of Chemistry and the Society of Chemical Industry. To be held at The Technical College, Gloucester.

EDINBURGH.

Thursday, November 12th, 1953, at 7.30 p.m.

Joint meeting with the Royal Institute of Chemistry and the Society of Chemical Industry. To be held at the North British Station Hotel, Edinburgh.

EXETER.

Thursday, November 19th, 1953, at 5 p.m.

Lecture, **The Synthesis of Nucleotide Co-enzymes,** by Professor A. R. Todd, D.Sc., F.R.S. To be given in the Washington Singer Laboratories.

GLASGOW.

Friday, November 20th, 1953, at 7.15 p.m.

Lecture, **Some Intermolecular Compounds,** by Mr. H. M. Powell, B.Sc., M.A., F.R.S. To be given in The University.

Wednesday, November 25th, 1953, at 5.45 p.m.

Centenary Lecture, **Some Applications of the Separation of Large Molecules and Colloidal Particles,** by Professor A. Tiselius, Sc.D., M.D. To be given in The University.

HULL.

Thursday, November 26th, 1953, at 6 p.m.

Lecture, **Aromatic Substitution,** by Professor M. J. S. Dewar, M.A., D.Phil. Joint meeting with the University College Scientific Society to be held at the University College.

IRISH REPUBLIC.

Friday, November 20th, 1953, at 7.45 p.m.

Lecture, **Recent Work in Terpene Chemistry,** by Sir John Simonsen, D.Sc., F.R.I.C., F.R.S. Joint meeting with the Werner Society to be held in the Department of Chemistry, Trinity College, Dublin.

LEEDS.

Tuesday, November 3rd, 1953, at 6.30 p.m.

Lecture, **Pernitrous Acid and its Nitrating and Hydroxylating Properties,** by Mr. R. Heslop, B.Sc., A.R.I.C. To be given in the Chemistry Lecture Theatre, The University.

Monday, November 23rd, 1953, at 6.30 p.m.

Royal Institute of Chemistry Lecture by Sir Harry Jephcott, M.Sc., F.R.I.C. To be given in the Chemistry Lecture Theatre, The University. (All Fellows are invited.)

LIVERPOOL.

Thursday, November 19*th*, 1953, *at* 5 *p.m.*

Tilden Lecture, **The Mechanism of the Reaction between Gases and Solids,** by Dr. J. S. Anderson, M.Sc., F.R.S. Joint meeting with the Royal Institute of Chemistry, Society of Chemical Industry, British Association of Chemists, and the University Chemical Society. To be held in the Chemistry Lecture Theatre, The University.

MANCHESTER.

Thursday, November 19*th*, 1953, *at* 6.30 *p.m.*

Lecture, **Manufacture of Chemicals from Petroleum,** by Dr. J. L. Edgar. Joint meeting with the Royal Institute of Chemistry and the Society of Chemical Industry to be held in the Chemistry Lecture Theatre, The University.

NEWCASTLE AND DURHAM.

Friday, November 13*th*, 1953, *at* 5.30 *p.m.*

Bedson Club Lecture, **The Third Dimension in Chemistry**, by Dr. A. F. Wells, M.A. To be given in the Chemistry Building, King's College, Newcastle-on-Tyne. (All Fellows are invited.)

Thursday, November 19*th*, 1953, *at* 7.45 *p.m.*

Lecture, **Some Intermolecular Compounds,** by Mr. H. M. Powell, B.Sc., M.A., F.R.S. Joint meeting with the Royal Institute of Chemistry and the Society of Chemical Industry. To be held in the University Science Buildings, South Road, Durham.

Friday, November 27*th*, 1953, *at* 5.30 *p.m.*

Bedson Club Lecture, **Contributions of Optical Activity to the Study of Some Chemical Reactions,** by Dr. J. Kenyon, F.R.S. To be given in the Chemistry Building, King's College, Newcastle-on-Tyne. (All Fellows are invited.)

NORTH WALES.

Thursday, November 19*th*, 1953, 5.45 *p.m.*

Lecture, **Electron-transfer Reactions,** by Professor F. S. Dainton, M.A., B.Sc., Ph.D. Joint meeting with the University College of North Wales Chemical Society. To be held in the Department of Chemistry, University College of North Wales, Bangor.

NOTTINGHAM.

Monday, November 2*nd*, 1953, *at* 5 *p.m.*

Lecture, **Some Problems raised by the Visualisation of Big Molecules,** by Dr. R. W. G. Wyckoff. Joint meeting with the University College of Leicester Chemical Society. To be held at University College, Leicester.

Thursday, November 26*th*, 1953, *at* 4.45 *p.m.*

Official Meeting and Tilden Lecture, **Aromatic Character in Seven-membered Ring Systems,** by Dr. A. W. Johnson. To be held in The University.

Monday, November 30*th*, 1953, *at* 5 *p.m.*

Lecture, **The Structures of Some Electron-deficient Solids,** by Professor H. C. Longuet-Higgins, M.A. Joint meeting with the University College of Leicester Chemical Society. To be held at University College, Leicester.

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ST. ANDREWS AND DUNDEE

Friday, November 13th, 1953, at 5.15 p.m.

Lecture, **The Stereochemistry of *cyclo*Hexane Derivatives,"** by Professor D. H. R. Barton, A.R.C.S., F.R.I.C. Joint meeting with the University Chemical Society, to be held in the Chemistry Department, United College, St. Andrews.

SHEFFIELD.

Thursday, November 26th, 1953, at 7.30 p.m.

Lecture, **Infra-red Spectroscopy and Chemical Problems,** by Dr. H. W. Thompson, M.A., D.Phil., F.R.S. Joint meeting with the Royal Institute of Chemistry and the University Chemical Society. To be held in the Chemistry Lecture Theatre, The University.

SOUTHAMPTON.

Friday, November 6th, 1953, at 5 p.m.

Lecture, **The Bacteriostatic Properties of Heterocyclic Compounds,** by Professor A. Albert, Ph.D., F.R.I.C. Joint meeting with Southampton University Chemical Society. To be held in the Chemistry Department, The University.

Friday, November 27th, 1953, at 5 p.m.

Lecture, **Anionotropy,** by Dr. E. A. Braude, A.R.C.S., D.I.C. Joint meeting with Southampton University Chemical Society. To be held in the Chemistry Department, The University.

SOUTH WALES.

Monday, November 9th, 1953, at 5.30 p.m.

Lecture, **Molecular Re-arrangements,** by Professor M. J. S. Dewar, M.A., D.Phil. To be given in the Chemistry Department, University College of Cardiff.

Friday, November 20th, 1953, at 6 p.m.

Lecture, **The Scope and Application of *X*-Ray Methods in Organic Chemistry,** by Professor J. Monteath Robertson, M.A., F.R.S. Joint meeting with the University College of Swansea Chemical Society and the Royal Institute of Chemistry. To be held at the University College of Swansea.

Friday, November 27th, 1953, at 5.30 p.m.

Tilden Lecture, **The Mechanism of Reactions Between Gases and Solids,** by Dr. J. S. Anderson, M.Sc., F.R.S. To be given at the University College of Swansea.

OFFICIAL ANNOUNCEMENTS

DEATHS.

The Council regret to announce the deaths of the following Fellows :

	Elected.	Died.
Erwin Brand (New York)	May 10th, 1951.	July 11th, 1953.
William Reading Bufton (Hereford)	Feb. 15th, 1917.	July 27th, 1953.
Charles Philip Jones (Leytonstone)	Feb. 17th, 1921.	April 29th, 1953.
Arthur Slator (Berkhamsted)	Dec. 3rd, 1903.	July 30th, 1953.

ACKNOWLEDGMENTS.

Acknowledgment is made of gifts of the Society's publications from Mr. T. Ashley, Miss N. J. Broadway, Mr. K. S. Warner, and Messrs. Boult, Wade, and Tennant.

ELECTION OF NEW FELLOWS.

The following 19 candidates were elected Fellows of the Society on August 10th, 1953 :

Gulab Dharamdas Bhavnani.
Alastair George Clark.
Claude William Haigh.
Qazi Abdul Haq.
Leopold Hartman.
Richard L. Hinman.
David Maitland Martin.
Ralph Alan Massy-Westropp.
Leonard Nicholl.
Arthur David Pearson.
Kenneth William Powell.
Eric Walter Ray.
Hugh Aidon Reilly.
Paul von Ragué Schleyer.
Ivan Hooglund Skoog.
Albert Tockman.
Calvin A. VanderWerf.
Harry M. Walborsky.
John Cosby White.

BRITISH ABSTRACTS.

The Continuing Committee of the Bureau of Abstracts (*Proceedings*, 1953, p. 79) have recently considered proposals for the continuation of the publication of *British Abstracts*. It is estimated that after the adoption of various measures to increase the revenue there would be an uncertain remaining deficit, and representatives of the Chemical Society and the Society of Chemical Industry on the Committee were unable to commit their Societies to meeting such future deficits. In these circumstances the Committee has decided that the production of *British Abstracts* must cease when the monthly issues and Indexes for the period up to the end of 1953 have been completed.

RESEARCH FUND.

A meeting of the Research Fund Committee will be held in November next. All persons who have received grants, and whose accounts have not been declared closed by the Council, are informed that reports must be received by the Society not later than November 2nd, 1953.

Applications for grants, to be made on forms obtainable from the General Secretary, must be received on or before November 14th, 1953. Applications from Fellows will receive prior consideration.

Attention is drawn to the fact that the income arising from the donation of the Worshipful Company of Goldsmiths is principally devoted to the encouragement of research in inorganic and metallurgical chemistry, and that the income from the Perkin Memorial Fund is to be applied to investigations relating to problems connected with the coal-tar and allied industries.

THE CORDAY–MORGAN MEDAL AND PRIZE.

The Corday–Morgan Medal and Prize, consisting of a Silver Medal and a monetary Prize of 150 Guineas, is awarded annually to the chemist of either sex and of British Nationality, who, in the judgment of the Council of the Chemical Society, shall have published during the year in question the most meritorious contribution to experimental chemistry, and who shall not, at the date of publication, have attained the age of thirty-six years. The Council has power to suspend the award in any year in which no suitable candidate presents himself or is brought to the notice of the Council.

Copies of the rules governing the award may be obtained from the General Secretary, Applications or recommendations in respect of the award for the year 1952 must be received not later than December 31st, 1953, and applications for the award for 1953 are due before the end of 1954.

LIST OF APPLICATIONS FOR FELLOWSHIP

(*Fellows wishing to lodge objection to the election of these candidates should communicate with the Honorary Secretaries within ten days of the date of publication of the* Journal *for September*, 1953. *Such objections will be treated as confidential. The forms of application are available in the Library.*)

***Brough, James Nuttall,** B.A. (Cantab.). British. University Chemical Laboratory, Cambridge. Research Student. *Signed by :* B. Lythgoe, F. B. Kipping, P. Sykes.

***Donovan, Ross Grant,** B.A. (Toronto). Canadian. P.O. Box 1175, Aurora, Ontario, Canada. Chemist, Collis Leather Co. *Signed by :* W. D. McFarlane, R. W. Kierstead, K. R. Bharucha.

***Duke, Angus John.** British. Emmanuel College, Cambridge. Research Student. *Signed by :* G. Porter, J. N. Agar, P. Sykes.

***Everett, Lyndon Harold,** B.Sc. (Wales). British. 39, High Street, Blaina, Mon. Research Student. *Signed by :* K. W. Sykes, D. G. Lewis, E. E. Ayling, C. W. Shoppee.

***Ferguson, James,** M.Sc. (Sydney). Australian. 93, O'Brien Street, Bondi, N.S.W., Australia. Teaching Fellow, Sydney University. *Signed by :* A. J. Birch, L. E. Lyons, T. Iredale.

***Johnstone, Alexander Henry,** B.Sc. (Edinburgh). British. 17, Church Street, Leith, Edinburgh, 6. Student Teacher. *Signed by :* T. R. Bolam, C. C. Miller, C. F. H. Tipper.

Kaye, Anthony Harmsworth, B.Sc., A.R.I.C. British. Cabot Carbon Ltd., Stanlow, Ellesmere Port, Wirral, Cheshire. Works Manager. *Signed by :* H. H. Hutt, B. H. Chorley, H. Weatherall.

***Magnusson, Eric Alfred.** Australian. 130, Ashley Street, Chatswood, N.S.W., Australia. Teacher. *Signed by :* R. S. Nyholm, L. N. Short, G. W. K. Cavill.

***Moye, Clarence James.** British. Wesley College, Newtown, Sydney, N.S.W., Australia. Research Student. *Signed by :* A. J. Birch, R. J. W. Le Fèvre, J. Cymerman-Craig.

***Newbold, Brian Trevor,** B.Sc. (Manc.), A.R.I.C. British. 22, Holt Lane, Failsworth, Manchester. *Signed by :* G. R. Barker, H. B. Henbest, M. C. Whiting.

Wilkinson, Geoffrey, B.Sc. and Ph.D. (Lond.), A.R.C.S. British. Chemistry Department, Harvard University, Cambridge 38, Massachusetts, U.S.A. Assistant Professor of Chemistry and Secretary to the Department of Chemistry, Harvard University. *Signed by :* V. M. Clark, P. L. Pauson, E. Csendes.

Wilson, Katherine Woods, M.S. and Ph.D. (Calif.). American. Department of Chemistry, George Pepperdine College, 1121, West 79th Street, Los Angeles 44, California, U.S.A. Chemistry Teacher. *Signed by :* D. C. Ifland, Z. B. Papanastassiou, J. B. Hickman.

UNDER SPECIAL PROVISION APPERTAINING TO CANDIDATES RESIDENT ABROAD.

***Ahlers, Willem Constantyn,** M.Sc. (Pretoria). South Africa. Department of Chemistry, University of Pretoria, Pretoria, South Africa. Lecturer in Physical Chemistry. *Signed by :* L. J. le Roux.

Bogaert-Verhoogen, Mrs. Daisy, Dr.Sc. (Brussels). Belgian. 28, Avenue Azmand Huysmans, Brussels, Belgium. Chef de travaux, Brussels University. *Signed by :* R. H. Martin.

***Farkas, Eugene,** B.S. and Ph.D. (Wayne Univ.). American. 17371, Palmer, Melvindale, Michigan, U.S.A. *Signed by :* A. J. Lemin, C. Djerassi.

***Gill, Stanley Jensen,** A.B. (Harvard). American. 1107, W. Green Street, Urbana, Illinois, U.S.A. Research Student. *Signed by :* D. Y. Curtin.

Mehta, Nariman Bomanshaw, B.A. and B.Sc. (Bombay), Ph.D. (Kansas). Indian. Department of Organic Chemistry, Wallberg Building, University of Toronto, Toronto 5, Canada. Research Associate. *Signed by :* K. R. Bharucha.

*__Mittal, Om Prakash,__ M.S. (Aligarh). Indian. 4315/2, Nr. Moti Parshad Building, B.D. High School, Ambala Cantt, Punjab, India. Lecturer in Chemistry. *Signed by :* M. O. Farooq, I. P. Varshney.

__Palaniappan, Narayana Palanikumaru,__ B.A. (Madras), M.Sc. (Andhra), M.Sc.Tech. (Manc.). Indian. Annamalai University, Annamalainagar, Madras State, India. Professor in Chemical Engineering and Head of Department of Technology. *Signed by :* V. Baliah.

*__Roeske, Roger William,__ Ph.D. (Illinois). American. Biochemistry Department, Cornell Medical College, 1300, York Avenue, New York 21, New York, U.S.A. Research Associate. *Signed by :* C. W. Roberts, J. M. Swan.

*__Swart, Edward Reinier,__ B.Sc.Eng. (Rand), M.Sc. (Pretoria). South African Department of Physical Chemistry, University of Pretoria, Pretoria, South Africa. Research Student. *Signed by :* L. J. le Roux.

*__Verghese, Kurian.__ Indian. Elevanakandy Paramba, Zilla Banglaw Road, Kozhikode, 1, South India. Demonstrator in Chemical Engineering, Kerala Polytechnic. *Signed by :* V. B. Krishnamani.

* Reduced Subscription.

PAPERS RECEIVED

(List of papers received between July 28th and August 26th, 1953.)

" Gladiolic acid. Part IV. Synthesis of 5-methoxy-6-methylphthalide." By D. GARDNER and JOHN FREDERICK GROVE.

" Rearrangement in the demethylation of 2'-methoxyflavones." By (MISS) J. M. GALLAGHER, (MISS) A. C. HUGHES, (MISS) M. O'DONNELL, (MRS.) E. M. PHILBIN, and T. S. WHEELER.

" Complexes involving tervalent iron and orthophosphoric acid. Part III. The system ferric oxide–phosphoric oxide–water at 25°." By R. F. JAMESON and J. E. SALMON.

" The chemistry of extractives from hardwoods. Part XIII. Colourless constituents of *Pterocarpus* species." By F. E. KING, C. B. COTTERILL, D. H. GODSON, L. JURD, and T. J. KING.

" The chemistry of extractives from hardwoods. Part XIV. The constitution of jacareubin, a pyranoxanthone from *Calophyllum brasiliense*." By F. E. KING, T. J. KING, and L. C. MANNING.

" *p*-Menthane-2 : 3-diols. Part III. Reductions of diosphenol with aluminium *iso*propoxide and with aluminium hydride." By A. KILLEN MACBETH and W. G. P. ROBERTSON.

" Chemical actions of ionising radiations in solution. Part XII. The actions of *X*-rays on some steroids in organic solvents." By BRYAN COLEBY, MAX KELLER, and JOSEPH WEISS.

" The condensation of glyoxal and *iso*nicotinhydrazide (Isoniazid)." By VINCENT C. BARRY and P. W. D. MITCHELL.

" Properties of periodate-oxidised polysaccharides. Part I. The preparation of polymeric substances containing nitrogen from oxidised starches." By VINCENT C. BARRY and P. W. D. MITCHELL.

" Properties of periodate-oxidised polysaccharides. Part II. The structure of some nitrogen-containing polymers." By VINCENT C. BARRY and P. W. D. MITCHELL.

" Studies in the steroid group. Part LXIII. Infra-red absorption of *cis*-disubstituted ethylenic centres." By H. B. HENBEST, G. D. MEAKINS, and GEOFFREY W. WOOD.

" Some transformations of α-acetamido-β-hydroxy-*p*-nitropropiophenone." By V. PETROW, O. STEPHENSON, and B. STURGEON.

" Pyrimidines. Part VII. Some pyrimidine analogues of 4-aminosalicylic acid." By J. F. W. MCOMIE and I. M. WHITE.

" Syntheses in the colchicine series. Part I. Products from the Stobbe condensation of methyl β-(2 : 3 : 4-trimethoxybenzoyl) butyrate with dimethyl succinate." By H. J. E. LOEWENTHAL.

" The reaction between hydroxylamine and sodium sulphite in solution in dilute acid." By D. S. BRACKMAN and W. C. E. HIGGINSON.

" Derivatives of acetoacetic acid. Part I. The reaction of diketen with 1 : 3- and 1 : 2-ketols to give δ- and γ-lactones." By R. N. LACEY.

" Derivatives of acetoacetic acid. Part II. The rearrangement of 3-acyl-2 : 5-dihydrofuran-2-one derivatives to furan-3-carboxylic acids." By R. N. LACEY.

" Derivatives of acetoacetic acid. Part III. The pyrolysis of acetoacetates of ethynylcarbinols." By R. N. LACEY.

" Derivatives of acetoacetic acid. Part IV. A new route to α-acetyltetronic acids." By R. N. LACEY.

" Derivatives of acetoacetic acid. Part V. The reaction of diketen with thioureas, amidines, guanidines, and *iso*thioureas." By R. N. LACEY.

" Derivatives of acetoacetic acid. Part VI. A synthesis of 1 : 3-oxazine derivatives employing diketen." By R. N. LACEY.

" Derivatives of acetoacetic acid. Part VII. α-Acetyltetramic acids." By R. N. LACEY.

" Derivatives of acetoacetic acid. Part VIII. The synthesis of coumarins from phenyl acetoacetates." By R. N. LACEY.

" Wool wax. Part V. The constitution of the α-hydroxy-acids." By D. H. S. HORN, F. W. HOUGEN, E. VON RUDLOFF, and D. A. SUTTON.

" Photochromism and multiple internal transitions at low temperatures in some *spiro*-pyrans. Part I." By YEHUDA HIRSHBERG and ERNST FISCHER.

" The isomerism of the oximes. Part XLVI. The alkaline hydrolysis of acetophenone oxime acetates." By O. L. BRADY and J. MILLER.

" The near ultra-violet absorption spectra of naphthalene and its monohalogeno-derivatives in solution." By J. FERGUSON.

" The preparation and properties of some alkyl β-D-glucopyranoside tetranitrates." By D. M. SHEPHERD.

" Addition of free radicals to unsaturated systems. Part VI. (1) Free-radical addition to the nitroso-group. (2) Spectroscopic studies of compounds containing nitrogen and oxygen." By J. JANDER and R. N. HASZELDINE.

" Chemical bonds involving *d*-orbitals. Part II." By D. P. CRAIG, A. MACCOLL, R. S. NYHOLM, L. E. ORGEL, and L. E. SUTTON.

" Ring fission of 2-cyano-2-methyl-1-oxotetralin." By D. B. COWELL, W. H. LINNELL, and D. W. MATHIESON.

" The Pfitzinger reaction of *p*-hydroxypropiophenone and similar phenolic ketones." By NG. PH. BUU-HOÏ and JEAN F. MIQUEL.

" The reduction of some methyl phenyl ketones, substituted benzyl alcohols, and 2-methyl-2-phenyl-1 : 3-dioxolans with sodium or potassium and alcohols in liquid ammonia." By A. R. PINDER and HERCHEL SMITH.

" Transfer of hydride ion." By G. BADDELEY and W. PICKLES.

" A dilatometric study of the transition in methyl alcohol." By L. A. K. STAVELEY and M. A. P. HOGG.

" Further studies of the supercooling of drops of some molecular liquids." By H. J. DE NORDWALL and L. A. K. STAVELEY.

" *cyclo*Octatetraene derivatives. Part III. Reduction of *cyclo*octatetraene by sodium and alcohols." By WILLIAM O. JONES.

" Curare and related topics. Part I. A preliminary examination of *Chondrodendron limaciifolium*." By J. A. BARLTROP and JOHN A. D. JEFFREYS.

" The molar volume of co-ordinated boron trifluoride." By N. N. GREENWOOD and R. L. MARTIN.

" Reduction of 4-methyl-3-nitroacetophenone." By O. L. BRADY and P. E. HALSTEAD.

" Chemistry of the platinum metals. Part III. Lattice constants of some chloropalladates, bromopalladates, and bromoplatinates." By A. G. SHARPE.

" The conversion of thiophen into 4 : 7 : 8 : 9-tetrahydro-4 : 7-*endo*sulphinylthionaphthen 1 : 1-dioxide." By W. DAVIES and F. C. JAMES.

" The mechanism of the Schmidt reaction with *o*-benzoylbenzoic acid." By C. L. Arcus and M. M. Coombs.

" The pyrolysis of some complex urethanes." By M. A. Fletcher, M. W. Lakin, and S. G. P. Plant.

" The preparation of some ditoluene-*p*-sulphonates." By F. Reeder and J. A. Timson.

" The mesomorphic transition points of the *p*-*n*-alkoxybenzoic acids—a correction." By G. W. Gray and Brynmor Jones.

" Nucleotides. Part XXIII. Mononucleotides derived from deoxycytidine. Note on the structure of cytidylic acids *a* and *b*." By A. M. Michelson and A. R. Todd.

" Nucleotides. Part XXIV. The action of some nucleases on simple esters of mononucleotides." By D. M. Brown, L. A. Heppel, and R. J. Hilmoe.

" Nucleotides. Part XXV. A synthesis of flavin–adenine dinucleotide." By S. M. H. Christie, G. W. Kenner, and A. R. Todd.

" Derivatives of 1 : 4-benzodioxan. Part I. Some halogen compounds of benzodioxan, and nitrogen compounds derived therefrom." By P. M. Heertjes, (Miss) A. A. Knape, H. Talsma, and P. Andriesse.

" Isotopic exchange reactions in anhydrous and acetone. Part I. Influence of concentration and purity of solvent." By E. R. Swart and L. J. le Roux.

" Low-temperature calorimetry and the thermodynamic properties of ethyl nitrate." By Peter Gray and P. L. Smith.

" Chemistry of anthanthrone. Part I. The direct replacement of hydrogen by hydroxyl and cyclic secondary amino-groups." By William Bradley and Jeffrey Waller.

" Chemistry of anthanthrone. Part II. Rearrangement and elimination reactions in the action of potassium hydroxide on two dibromoanthanthrones." By William Bradley and Jeffrey Waller.

" *N*-Alkylation of nitriles in presence of silver sulphate." By J. Cast and T. S. Stevens.

" Potential thiophen chemotherapeutics. Part III. Some 5-substituted 2-thienyl sulphides and sulphones." By J. Cymerman-Craig and J. W. Loder.

" 2-Methyl-*p*-benzoquinone 1-toluene-*p*-sulphonimide." By F. Bell.

" The chlorination of arylamine derivatives by sulphuryl chloride." By F. Bell.

" β-Acetylacrylic acid in the Diels–Alder reaction. Part I. Some derivatives of the adduct derived from 4-oxopent-2-enoic acid and butadiene." By S. Dixon and L. F. Wiggins.

" The participation of stannic halide catalysts in the reactions of styrene with hydrogen halides. Halogen exchange between stannic halides and 1-phenylethyl halides." By Kathleen Heald and Gwyn Williams.

" The racemisation of (−)-1-phenylethyl chloride by stannic chloride in carbon tetrachloride, and its bearing on the cationic polymerisation of styrene." By Kathleen Heald and Gwyn Williams.

" Separation and estimation by partition chromatography on paper of (1) copper, bismuth, cadmium, and mercury, (2) arsenic, antimony, and tin, (3) iron, aluminium, and chromium." By Mohammad Saeed Zahid and Mohammad Salim.

" Studies in the synthesis of cortisone. Part III. The degradation of the ergosterol side chain." By A. F. B. Cameron, J. S. Hunt, J. F. Oughton, P. A. Wilkinson, and B. M. Wilson.

" The reaction of *o*-nitroaniline with 1-naphthylamine." By J. W. Cook and Leon Hunter.

" The addition of maleic anhydride to 9 : 10-diphenylanthracene." By J. W. Cook and Leon Hunter.

" Researches on acetylenic compounds. Part XLI. The synthesis of the diphenylpolyacetylenes." By J. B. Armitage, N. Entwistle, E. R. H. Jones, and M. C. Whiting.

" Steroids and related compounds. Part XV. The chlorination of cholestan-3-one." By Bernard Ellis and Vladimir Petrow.

" Densities of some binary liquid mixtures. Part II." By V. S. Griffiths.

" The Diels–Alder reaction with certain *o*-quinones." By J. A. Barltrop and John A. D. Jeffreys.

"Stannic chloride-catalysed reactions between trimethylethylene and formaldehyde." By L. E. ADDY and JOHN W. BAKER.

"Indoles derived from aromatic amines and 2-hydroxy-ketones. The synthesis of 5-acetyl-2 : 3 : 4′ : 5′-tetraphenylpyrrolo(2′ : 3′-6 : 7)indole." By N. A. JONES and MURIEL L. TOMLINSON.

"The conductivity of electrolytes in non-aqueous and mixed solvents. Part I." By V. S. GRIFFITHS.

"2 : 4′-Dipiperidyl : its structure and derivatives." By E. P. HART.

"The adsorption method of measuring surface areas." By R. M. BARRER, N. MACKENZIE, and D. MACLEOD.

"Conductivity and solubility studies of some glycollates and lactates." By W. P. EVANS and C. B. MONK.

"The chemistry of the triterpenes and related compounds. Part XXI. Some aspects of the chemistry of the elemi acids." By T. G. HALSALL, G. D. MEAKINS, and R. E. H. SWAYNE.

"The dehydration of some β-benzamido-acids with acetic anhydride." By C. C. BARKER.

"Colouring matters of the aphididae. Part IX. Studies on the nature of the aromatic ring system in the erythroaphins." By B. R. BROWN, A. W. JOHNSON, J. R. QUAYLE, and A. R. TODD.

"The chemistry of bivalent germanium compounds. Part IV. Formation of germanous salts by hypophosphorous acid reduction." By D. A. EVEREST.

"The preparation and deamination of 4 : 4′-diamino-3 : 3′-dinitrodiphenyl." By C. C. BARKER and F. D. CASSON.

"Synthesis of fluoranthenes. Part XII. Spectroscopic examination of fluoranthene derivatives." By H. W. D. STUBBS and S. HORWOOD TUCKER.

"The mechanism of the coupling of diazonium salts with heterocyclic compounds. Part I. Glyoxaline." By R. D. BROWN, H. C. DUFFIN, J. C. MAYNARD, and J. H. RIDD.

"The mechanism of decarboxylation. Part VII. The decarboxylation of α-amino-acids in benzaldehyde." By D. LL. HAMMICK, A. M. ROE, F. W. WESTON, and K. D. E. WHITING.

"Infra-red absorptions and molecular structures of phenol, phenolphthalein, fluorescein, and some alkali derivatives thereof." By MANSEL DAVIES and R. LUMLEY JONES.

"Lanthanon complexes with ethylenediaminetetra-acetic acid. Part IV." By R. C. VICKERY.

ADDITIONS TO THE LIBRARY

I. *Donations*

A. *Books.*

(i) *From the Association of British Chemical Manufacturers*

DAVEY, WHEELER P. A study of crystal structures and its applications. New York 1934. pp. xi + 695. ill. McGraw-Hill.

ELDRIDGE, JOHN A. The physical basis of things. New York 1934. pp. xiv + 407. ill. McGraw-Hill.

HUGHES, A. C., ADAM, W. G., and CHINA, F. J. E. Tar roads. London 1938. pp. xii + 196. ill. Arnold.

HUTCHINSON'S TECHNICAL AND SCIENTIFIC ENCYCLOPAEDIA. 4 vols. Edited by C. F. TWENEY and I. P. SHIRSHOV. London [1935]. pp. viii + 2468. ill. (*Reference.*) Hutchinson.

MITCHELL, H. V. Fuel oils and their applications; an introductory treatise on the sources, classification, and production of fuel oils. With notes on colloidal fuels. 2nd edition. Revised by ARTHUR GROUNDS. London 1930. pp. xii + 176. ill. Pitman.

SPIELMANN, PERCY EDWIN, and ELFORD, ERNEST JOHN. Road making and administration. London 1934. pp. x + 441. ill. Arnold.

THOMAS, ARTHUR W. Colloid chemistry. New York 1934. pp. viii + 512. ill. McGraw-Hill.

(ii) *Miscellaneous*

BEILSTEINS HANDBUCH DER ORGANISCHEN CHEMIE. 4th edition. 2nd supplement. Vol. 21. Berlin 1953. pp. xxxii + 567. (*Reference.*) Springer.
From the Beilstein Institute.

KNIBBS, N. V. S., and GEE, B. J. Lime and limestone. Part I. The origin, occurrence, properties, chemistry, analysis, and testing of limestone, dolomite, and their products, and the theory of lime-burning and hydration. [Toronto 1953.] pp. [i] + 113. ill. H. L. Hall Corporation Ltd. (*Recd.* 20/8/53.) From the Authors.

OCHANOMIZU UNIVERSITY. Natural Science Report. Vol. 4, No. 1, etc. Tokyo 1953+. (*Reference.*)
From the Society of Public Analysts.

PROGRESS IN ORGANIC CHEMISTRY. Vol. 2. Edited by JAMES WILFRID COOK. London 1953. pp. viii + 212. ill. (*Reference.*) Butterworth. 42*s.* From the Editor.

SISLER, HARRY H., VANDERWERF, CALVIN A., and DAVIDSON, ARTHUR W. College chemistry; a systematic approach. New York 1953. pp. x + 623. ill. Macmillan. $5.25. (*Recd.* 17/8/53.) From the Publishers.

B. *Pamphlets.*

MACLEAN, DONALD JOHN, and ROBINSON, PETER JOHN MACKENZIE. Methods of soil stabilization and their application to the construction of airfield pavements. London 1953. pp. [56]. ill. (From *Proc. Inst. Civil Eng.*, June 1953.)

MEDICAL RESEARCH COUNCIL. Special Report Series No. 279. Plant proteins in child feeding. By R. F. A. DEAN. London 1953. pp. viii + 163. ill.

NOTTINGHAM UNIVERSITY. Plant products and their utilisation, by SIR JOHN LIONEL SIMONSEN. Nottingham 1953. pp. 12. (Sir Jesse Boot Foundation Lecture, 1952—1953.)

II. *By purchase*

AMERICAN SOCIETY FOR TESTING MATERIALS. Fifty-year index to A.S.T.M. technical papers and reports. 1898—1950. Philadelphia 1952. pp. viii + 207. (*Reference.*) A.S.T.M. $6.

HANDBUCH DER ANALYTISCHEN CHEMIE. Edited by W. FRESENIUS and G. JANDER. Part III. Vol. 8b*γ*. iii. Berlin 1953. pp. xiii + 118. ill. (*Reference.*) Springer. 42*s.*

JAPAN. *National Institute of Health.* Japanese Medical Journal. Vols. 1—4. Tokyo 1948—1951. *Continued as*: Japanese Journal of Medical Science and Biology. Vol. 5, etc. Tokyo 1952+. (*Reference.*)

JENSEN, LLOYD B. Man's foods; nutrition and environment in food gathering times and food producing times. Champaign 1953. pp. x + 278. Garrard Press. $4.50. (*Recd.* 31/7/53.)

TANNER, FRED WILBUR, and TANNER, LOUISE P. Food-borne infections and intoxications. 2nd edition. Champaign 1953. pp. x + 769. Garrard Press. $12. (*Recd.* 17/8/53.)

LOCAL REPRESENTATIVES OF THE CHEMICAL SOCIETY

Aberdeen.	R. H. Thomson, Ph.D., F.R.I.C., Chemistry Department, The University, Old Aberdeen.
Australia.	Professor A. J. Birch, M.Sc., D.Phil., Department of Organic Chemistry, The University, Sydney, N.S.W., Australia.
Birmingham.	E. J. Bourne, B.Sc., Ph.D., Department of Chemistry, The University, Edgbaston, Birmingham, 15.
Bristol.	F. H. Pollard, B.Sc., Ph.D., A.R.I.C., Chemistry Department, The University, Woodland Road, Bristol.
Cambridge.	R. N. Haszeldine, B.Sc., Ph.D., University Chemical Laboratory, Pembroke Street, Cambridge.
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Glasgow.	F. D. Gunstone, B.Sc., Ph.D., Chemistry Department, The University, Glasgow, W.2.
Hull.	W. B. Orr, D.Sc., Ph.D., Chemistry Department, University College, Hull.
India.	Sir Shanti S. Bhatnager, O.B.E., D.Sc., F.R.S., Secretary, Ministry of Natural Resources and Scientific Research, New Delhi, India.
Irish Republic.	V. C. Barry, D.Sc., F.R.I.C., Medical Research Council of Ireland, The Laboratories, Trinity College, Dublin.
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,,	D. W. Broad, Ph.D., A.R.I.C., Imperial Chemical Industries, Ltd., Research Department, Widnes Laboratory, Widnes.
Manchester.	G. R. Barker, B.Sc., Ph.D., Chemistry Department, The University, Manchester, 13.
,,	M. A. T. Rogers, B.Sc., Ph.D., A.R.I.C., Imperial Chemical Industries, Ltd., Hexagon House, Blackley, Manchester.
Newcastle and Durham.	G. A. Swan, B.Sc., Ph.D, F.R.I.C., Department of Chemistry, King's College, Newcastle-on-Tyne, 1.
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Northern Ireland.	R. G. R. Bacon, Ph.D., A.R.C.S., Chemistry Department, Queen's University, Belfast.
North Wales.	J. E. McKail, Ph.D., Department of Chemistry, University College of North Wales, Bangor.
Nottingham.	C. C. Addison, D.Sc., Ph.D., F.R.I.C., Chemistry Department, The University, University Park, Nottingham.
Oxford.	H. M. N. H. Irving, M.A., D.Phil., F.R.I.C., Inorganic Chemistry Laboratory, South Parks Road, Oxford.
Pakistan.	M. I. D. Chughtai, M.Sc.Tech., Ph.D., A.R.I.C., Punjab University Institute of Chemistry, The Mall, Lahore, Pakistan.
St. Andrews and Dundee.	H. T. Openshaw, M.A., D.Phil., Chemistry Department, United College, St. Andrews.
Sheffield.	H. J. V. Tyrrell, M.A., B.Sc., Chemistry Department, The University, Sheffield, 10.
South Africa.	Professor W. Pugh, Ph.D., B.Sc., F.R.I.C., Chemistry Department, University of Cape Town, Rondebosch, S. Africa.
Southampton.	N. B. Chapman, M.A., Ph.D., A.R.I.C., Department of Chemistry, The University, Southampton.
South Wales.	K. W. Sykes, M.A., B.Sc., D.Phil., Department of Chemistry, University College, Singleton Park, Swansea.

PROCEEDINGS
OF THE
CHEMICAL SOCIETY

SCIENTIFIC MEETINGS DURING DECEMBER, 1953

LONDON.

Thursday, December **3rd**, **1953**, *at* 7.30 *p.m.*

The following papers will be read and discussed :

" The Chemistry of the Triterpenes and Related Compounds. Part XXIII. The Structures of Taraxasterol, ψ-Taraxasterol (Heterolupeol) and Lupenol-I." By T. R. Ames, J. Beton, A. Bowers, T. G. Halsall, and E. R. H. Jones.

" Studies in the Synthesis of Cortisone, Part VIII. Wagner–Meerwein rearrangement involving Rings C and D of the steroid nucleus." By J. Elks, G. H. Phillipps, D. A. H. Taylor, and L. J. Wyman.

" The Conversion of Hecogenin Acetate into 11-Oxotigogenin Acetate." By J. W. Cornforth, J. M. Osbond, and G. H. Phillipps.

To be held in the Rooms of the Society, Burlington House, W.1.

Thursday, December **17th**, **1953**, *at* 7.30 *p.m.*

The papers to be read and discussed will include the following :

" The Participation of Stannic Halide Catalysts in the Reactions of Styrene with Hydrogen Halides. Halogen Exchange between Stannic Halides and 1-Phenylethyl Halides." By Kathleen Heald and Gwyn Williams.

" The Racemisation of (—)-1-Phenylethyl Chloride by Stannic Chloride in Carbon Tetrachloride and its Bearing on the Cationic Polymerisation of Styrene." By Kathleen Heald and Gwyn Williams.

" The Kinetic Chain Length in the Polymerisation of Styrene by Stannic Chloride in Carbon Tetrachloride." By Gwyn Williams and J. S. Coe.

" The Polymerisation of Styrene by Hydrogen Halides and by Stannic Halides." By D. C. Pepper.

To be held in the Rooms of the Society, Burlington House, W.1.

ABERDEEN.

Thursday, December **17th**, **1953**, *at* 5.15 *p.m.*

Lecture, **Some Aspects of Chemical Engineering,** by Mr. H. W. Cremer, C.B.E., M.Sc. Joint Meeting with the Royal Institute of Chemistry and the Society of Chemical Industry. To be held in the Chemistry Department, The University, Old Aberdeen.

BIRMINGHAM.

Friday, December **4th**, **1953**, at 4.30 *p.m.*

Lecture, **Some Intermolecular Compounds,** by Mr. H. M. Powell, B.Sc., M.A., F.R.S. Joint Meeting with Birmingham University Chemical Society. To be held in the Chemistry Department, The University.

BRISTOL.

Thursday, December 3rd, 1953, at 7 p.m.

Lecture, **Metallurgical Trends of Interest to the Chemical Industry,** by Mr. L. Rotherham, M.Sc., F.Inst.P. Joint meeting with the Royal Institute of Chemistry, the Society of Chemical Industry and the Institute of Metals. To be held in the Department of Chemistry, The University.

EDINBURGH.

Thursday, December 10th, 1953, at 7.30 p.m.

Lecture, **A Chapter of Accidents in Chemical Discovery,** by Dr. R. B. Strathdee, O.B.E. Joint meeting with the Royal Institute of Chemistry and the Society of Chemical Industry. To be held at the North British Station Hotel, Edinburgh.

MANCHESTER.

Friday, December 4th, 1953, at 6.30 p.m.

Lecture, **Chemistry and Pharmacological Reactions,** by Mr. J. W. Trevan, F.R.C.P., F.R.S. Joint meeting with the Royal Institute of Chemistry and the Society of Chemical Industry. To be held in the Robinson Lecture Theatre, The University.

OFFICIAL ANNOUNCEMENTS

DEATHS.

The Council regrets to announce the deaths of the following Fellows:

	Elected.	Died.
Alfred Ernest Bond (Kidderminster)	Apr. 4th, 1899.	Aug. 11th, 1953.
John Christie (Johannesburg)	Dec. 4th, 1930.	Apr. 10th, 1953.
Laurence John Lermit (Salisbury)	May 1st, 1947.	June 24th, 1953.
Sir Thomas Weston Johns Taylor (Exeter) ... (Council 1936—39)	Feb. 17th, 1921.	Aug. 29th, 1953.

ACKNOWLEDGMENT.

Acknowledgment is made of a gift of the Society's publications from Professor J. E. Driver.

ELECTION OF NEW FELLOWS.

The following 33 candidates were elected Fellows of the Society on September 10th, 1953:

Otto Bayer.
Frank William Bennett.
Karl Hermann Friedrich Blau.
Gordon Ivor Carver.
Leslie Richard Cox.
Peter Clair Crisp.
Alan Critchlow.
Andre S. Dreiding.
William Drell.
Abraham S. Endler.
Brian N. Figgis.
Spyridon Flengas.
John Warren George.
Philip George.
Robert Louis Heppolette.
Roderick Henry Horning.
Andrew Steven Kende.
Alan McKay.
George MacLennan.
James Cullen Martin.
David Thomas George Morgan.
Janet Eileen Morton.
Joan Patterson.
Donald Payne.
Andrew Lawrie Porte.
Syed Jamal Quadir.
Shigeo Senda.
John Alec Sydney Smith.
Marjorie Smith.
Max Edwin Tate.
Anthony Michael Thrush.
Heinrich B. Waelsch.
Robert Arthur White.

ASSISTANT EDITOR.

Mr. A. E. Somerfield has been appointed an Assistant Editor.

HARRISON MEMORIAL PRIZE.

In accordance with the Trust Deed governing the Harrison Memorial Fund, the Selection Committee, consisting of the Presidents of the Chemical Society, the Royal Institute of Chemistry, the Society of Chemical Industry, and the Pharmaceutical Society, will make an award of the Harrison Memorial Prize in December 1953, subject to the condition that the Selection Committee shall be of opinion that there is a candidate of sufficient distinction to warrant an award of the Prize.

The Prize, not exceeding 100 guineas, will be awarded to the chemist of either sex being a natural-born British subject and not at the time over thirty years of age, who, in the opinion of the Selection Committee, shall during the previous five years, have conducted the most meritorious and promising original investigations in Chemistry and published the results of those investigations in a scientific periodical or periodicals.

Applications, five copies of which must be submitted, should give: the name of the applicant (in full); age (birth certificate should accompany the application); degrees (with name of University); any other qualifications and experience; titles of published papers (with co-authors names) including full references to publication; where research

was carried out; testimonials and references; and any other particulars bearing on the application.

The Selection Committee is prepared to consider applications, nominations, or information as to candidates eligible for the Prize. Any such communication must be received by the President, The Chemical Society, Burlington House, Piccadilly, London, W.1, not later than Tuesday, December 1st, 1953. Candidates must not have attained the age of thirty years at this date.

LIST OF APPLICATIONS FOR FELLOWSHIP

(*Fellows wishing to lodge objection to the election of these candidates should communicate with the Honorary Secretaries within ten days of the date of publication of the* Journal *for October*, 1953. *Such objections will be treated as confidential. The forms of application are available in the Library.*)

***Andrews, John James,** B.Sc. (Liv.). British. 63, Hartington Road, Liverpool, 8. Student at Liverpool University. *Signed by:* A. K. Holliday, G. Skirrow, M. L. Meara.

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***Mottram, John Arthur,** A.R.I.C. British. No. 1 A.I.S.T.C., R.A.F., Kasfareet, M.E.A.F. 15. National Service. *Signed by:* T. O. Young.

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* Reduced Subscription.

PAPERS RECEIVED

(List of papers received between August 26th and September 25th, 1953.)

" Kinetics of the decomposition of tetralin hydroperoxide in acidic and basic solvents." By (Miss) J. E. Hay, (Miss) N. M. Johnstone, C. F. H. Tipper, and R. K. Williams.

" *o*-Mercaptoazo-compounds. Part IV. Preparation and debenzylation of 1-(2-benzylthiophenylazo)-2-naphthol and 1-(1-benzylthio-2-naphthylazo)-2-naphthol." By A. Buraway, C. Turner, W. I. Hyslop, and P. Raymakers.

" *o*-Mercaptoazo-compounds. Part V. Preparation and debenzylation of 2-benzylthioazobenzene." By A. Burawoy and C. E. Vellins.

" The interaction of calcium ions with some phosphate and citrate buffers." By C. W. Davies and B. E. Hoyle.

" A two-step preparation of azulene from naphthalene or tetralin." By Wilson Baker, W. K. Warburton, and (in part) L. J. Breddy.

" Structure and configuration of the two solid dimerides of *iso*safrole." By WILSON BAKER, J. A. GODSELL, J. F. W. MCOMIE, and T. L. V. ULBRICHT.

" Organosilicon compounds. Part VII. The molecular complex between iodine and tri-*cyclo*hexyliodosilane." By C. EABORN.

" Studies of α-trifluoromethylacrylic acid, α-trifluoromethylpropionic acid, and some derived compounds." By M. W. BUXTON, M. STACEY, and J. C. TATLOW.

" A characteristic infra-red absorption of the triphenylmethyl group." By S. PINCHAS and D. H. SAMUEL.

" Experiments on the synthesis of santonin. Part III. The preparation and bromination–dehydrobromination of ethyl α-(1 : 2 : 3 : 4 : 5 : 6 : 7 : 10-octahydro-8 : 10-dimethyl-7-oxo-2-naphthyl)propionate." By F. D. GUNSTONE and A. P. TULLOCH.

" The preparation and some properties of plutonium fluorides." By J. K. DAWSON, (MISS) R. M. ELLIOTT, R. HURST, and A. E. TRUSWELL.

" The action of hydrogen sulphide on certain aromatic amines in the presence of formaldehyde." By DENNIS COLLINS and JOHN GRAYMORE.

" The liquid dinitrogen tetroxide solvent system. Part XVI. Reactions with ethylammonium nitrate solutions: ethylammonium tetranitratozincate." By C. C. ADDISON and H. HODGE.

" The liquid dinitrogen tetroxide solvent system. Part XVII. The equilibrium between alkylammonium and nitrosonium tetranitratozincates: the explosive decomposition of triethylammonium nitrate–dinitrogen tetroxide mixtures." By C. C. ADDISON, N. HODGE, and (in part) R. THOMPSON.

" Organometallic and organometalloidal compounds. Part VIII. Properties of trifluoromethylarsenic acids and of other fluorine-containing acids." By H. J. EMELÉUS, R. N. HASZELDINE, and RAM CHAND PAUL.

" The influence of uranyl and thorium salts on the miscibility of phenol and water." By S. T. BOWDEN and J. H. PURNELL.

" Miscibility phenomena in ternary systems containing diphenyl ether, water, and an aliphatic alcohol or acid." By J. H. PURNELL and S. T. BOWDEN.

" Some products formed from phenolic inhibitors during the autoxidation of cumene." By R. F. MOORE and WILLIAM A. WATERS.

" Interaction of β-aroylacrylic acids and aluminium chloride." By G. BADDELEY, S. M. MAKAR, and (MISS) M. G. IVINSON.

" Cleavage of steroid epidioxides with lithium aluminium hydride." By G. F. LAWS.

" 6 : 7-Benzothionaphthen." By W. CARRUTHERS.

" Steroids. Part XXIII. Some oxidation products of ergosta-7 : 14 : 22-trien-3β-yl acetate (ergosteryl B_3 acetate)." By D. H. R. BARTON and G. F. LAWS.

" The Friedel–Crafts reaction." By G. BADDELEY and D. VOSS.

" Electron transfer in alkali metal–hydrocarbon complexes." By W. A. HOLMES-WALKER and A. R. UBBELOHDE.

" *cyclo*Octatetraene derivatives. Part IV. *cyclo*Octylphenols." By WILLIAM O. JONES.

" Cinnolines and related heterocyclic types in the chemotherapy of trypanosomiasis. Part VII. Intermediates." By C. M. ATKINSON, (the late) J. C. E. SIMPSON, and A. TAYLOR.

" The crystal structure of the acid salts of some monobasic acids. Part III. Potassium hydrogen bisbenzoate." By J. M. SKINNER, G. M. D. STEWART, and J. C. SPEAKMAN.

" Some dyes derived from 2-hydroxymethylbenzothiazole." By R. A. JEFFREYS.

" A spectroscopic study of the nature of the complexes of purines with aromatic compounds." By J. BOOTH, E. BOYLAND, and S. F. D. ORR.

" Studies in the steroid group. Part LXIV. Synthesis of cortisone acetate *via* 5α-hydroxy-steroids." By PETER BLADON, H. B. HENBEST, E. R. H. JONES, (MISS) B. J. LOVELL, and GILBERT F. WOODS.

" Studies in the synthesis of cortisone. Part IV. The oxidation of steroid 7 : 9-dienes with sodium dichromate in acetic acid." By J. ELKS, R. M. EVANS, A. G. LONG, and G. H. THOMAS.

" Studies in the synthesis of cortisone. Part V. Acid rearrangement of 9α : 11α-epoxy-Δ^7-steroids having hydroxy- or acetoxy-groups at $C_{(5)}$." By J. ELKS, R. M. EVANS, J. F. OUGHTON, and G. H. THOMAS.

" 2 : 3- and 2 : 5-diaminoquinol diethyl ether." By E. S. LANE and C. WILLIAMS.

" The kinetics and mechanisms of nucleophilic displacements in allylic systems. Part V. Reactivities of allylic halides by the S_N1 mechanism of hydrolysis." By C. A. VERNON.

" Heterocyclic imines and amines. Part III. Succinimidine." By J. A. ELVIDGE and R. P. LINSTEAD.

" Paracyanogen : its formation and properties. Part I. " By L. L. BIRCUMSHAW, F. M. TAYLER, and D. H. WHIFFEN.

" Steroids. Part III. (Studies of $C_{(6)}$-oxygenated steroids. Part II.) A novel synthesis of 6-hydroxy-Δ^4-3-ketones." By (MISS) C. AMENDOLLA, G. ROSENKRANZ, and FRANZ SONDHEIMER.

" The thermal decomposition of *tert*-butylamine." By H. O. PRITCHARD, R. G. SOWDEN, and A. F. TROTMAN-DICKENSON.

" Amino-acids and peptides. Part XI. The kinetics of the self-condensation of glycylglycylglycine methyl ester." By P. S. REES, D. P. TONG, and G. T. YOUNG.

" The chemistry of extractives from hardwoods. Part XV. The constitution of methyl vinhaticoate." By F. E. KING and T. J. KING.

" The Bodroux reaction." By H. LL. BASSETT and C. R. THOMAS.

" A kinetic study of the formation and hydrolysis of *tert.*-butyl hypochlorite." By M. ANBAR and I. DOSTROVSKY.

" Ultra-violet absorption spectra of some organic hypohalites." By M. ANBAR and I. DOSTROVSKY.

" Observations on the synthesis of adenine labelled at $C_{(8)}$." By MAXWELL GORDON.

" The polysaccharide from the alga *Ulva lactuca*. Purification, hydrolysis, and methylation of the polysaccharide." By (MISS) JOYCE W. E. BRADING, (MRS.) M. M. T. GEORG-PLANT, and (MISS) DOREEN M. HARDY.

" The steroid series. Part III. Synthesis of methyl 3β-acetoxybisnor*allo*cholanate from dehydro*epi*androsterone acetate." By D. H. HEY, JOHN HONEYMAN, and W. J. PEAL.

" Ionisation equilibria of metal co-ordination complexes in benzene solution. Part II. A comparison of geometrical isomers; the *trans*-effect." By A. R. BURKIN and J. CHATT.

" The homolytic nitration of quinoline with pernitrous acid." By J. R. LAVILLE and WILLIAM A. WATERS.

" Analogues of 8-hydroxyquinoline having additional cyclic nitrogen atoms. Part II. Further preparations, and some physico-chemical properties." By ADRIEN ALBERT and ALEXANDER HAMPTON.

" The isolation of oligosaccharides from gums and mucilages. Part I." By P. ANDREWS, D. H. BALL, and J. K. N. JONES.

" Studies in the synthesis of cortisone. Part VI. Conjugated trienones derived from ergosterol." By J. ELKS.

" Chemistry of indanthrone. Part IX. 5 : 10-Dihydro-1 : 2-7 : 8-diphthaloylphenazine." By WILLIAM BRADLEY, ROY F. MAISEY, and COLIN R. THITCHENER.

" The synthesis of 2-phenyl*cyclo*heptatrienone from 2-phenyl*cyclo*hept-2-enone." By DOV ELAD and DAVID GINSBURG.

" Kinetics of the depolymerisation of paraldehyde in aqueous solution." By R. P. BELL and A. H. BROWN.

" The preparation and properties of 1 : 2 : 3 : 4-tetrahydro-1-methyl-4-oxoquinoline." By JOHN A. C. ALLISON, JOHN T. BRAUNHOLTZ, and FREDERICK G. MANN.

" Synthesis of possible antimalarials. Part III. Synthesis of 1-*iso*quinolyl-, 3-*iso*quinolyl-, and 2-quinolyl-2-quinuclidylmethanols." By G. R. CLEMO and M. HOGGARTH.

" Infra-red spectra of carbohydrates. Part I. Some derivatives of D-glucopyranose." By S. A. BARKER, E. J. BOURNE, M. STACEY, and D. H. WHIFFEN.

" The degradation of carbohydrates by alkali. Part III. 3-*O*-Methyl derivatives of glucose and fructose." By J. KENNER and G. N. RICHARDS.

" Studies on seed mucilages. Part VI. The seed mucilage of *Plantago arenaria*." By E. L. HIRST, (the late) E. G. V. PERCIVAL, and CLARE B. WYLAM.

" The photochemical autoxidation of *iso*propylbenzene." By H. W. MELVILLE and S. RICHARDS.

" Exchange reactions of solid oxides. Part III. Magnesium oxide." By G. HOUGHTON and E. R. S. WINTER.

" Exchange reactions of solid oxides. Part IV. Zinc oxide." By J. A. BARNARD, E. R. S. WINTER, and H. V. A. BRISCOE.

" Electron-transfer reactions between metallic ions, co-ordination complexes, and hæmoglobin." By PHILIP GEORGE and D. H. IRVINE.

ADDITIONS TO THE LIBRARY

I. *Donations.*

A. *Books.*

BOER, THYMEN JAN DE. Theory and application of sulphonylnitrosamides. Groningen 1953. pp. iv + 100. ill. J. B. Wolters. (*Recd.* 21/9/53.) From the Author.

CONGRÈS INTERNATIONAL DE CHIMIE PURE ET APPLIQUÉE, XIII. Stockholm, 1953. Communications [from Russian authors]. Moscow 1953. pp. 350. Academy of Sciences, U.S.S.R. (*Reference.*)
From Lt. Col. F. J. Griffin.

FERGUSON, LLOYD N. Electron structures of organic molecules. London 1952. pp. xi + 335. ill. (*Recd.* 17/8/53.) 48*s*.
From the Publishers : Messrs. Constable & Co., Ltd.

LOUW, DANIEL FRANCOIS. Δ^5-Sterole en provitamiene D met vertakte sykettings. Groningen 1953. pp. [iv] + 108. ill. J. B. Wolters. (*Recd.* 21/9/53.) From the Author.

OLII MINERALI, GRASSI E SAPONI, COLORI E VERNICI. Vol. 30, etc. Milano 1953+. (*Reference.*) 4,500 *lira* p.a.
From the Society of Public Analysts.

PHARMACOPŒIA OF JAPAN. 6th edition. [Tokyo 1952.] pp. xxiv + 892.
From the Publishers : Ministry of Health and Welfare.

ROSS, T. K. An introduction to chemical engineering. London 1953. pp. x + 214. ill. 21*s*. (*Recd.* 8/9/53.)
From the Publishers : Sir Isaac Pitman & Sons, Ltd.

B. *Pamphlet.*

OSTWALD, WILHELM. Julius Robert Mayer über Auslösung. Edited by ALWIN MITTASCH. Weinheim 1953. pp. 56. ill.

II. *By Purchase*

AMERICAN INSTITUTE OF CHEMICAL ENGINEERS. Chemical Engineering Progress Monograph Series. No. 1, etc. New York 1951+.

—— Chemical Engineering Progress Symposium Series. No. 1, etc. New York 1951+.

AMERICAN SOCIETY FOR TESTING MATERIALS. Manual of industrial water. Philadelphia 1953. pp. [v] + 336. ill. A.S.T.M. $4.25. (*Recd.* 24/9/53.)

—— Symposium on recent developments in the evaluation of natural rubber. Philadelphia 1953. pp. [v] + 111. ill. A.S.T.M. (*Reference.*) $2.25.

—— Symposium on testing adhesives for durability and permanence. Philadelphia 1953. pp. [iv] + 60. ill. A.S.T.M. (*Reference.*) $1.75.

HANDBUCH DER PHYSIOLOGISCH- UND PATHOLOGISCH-CHEMISCHEN ANALYSE. 10th edition. Edited by KONRAD LANG and EMIL LEHNARTZ. Vol. 1, etc. Berlin 1953+. (*Reference.*) Springer.

SAMUELSON, OLOF. Ion exchangers in analytical chemistry. New York 1953. pp. xviii + 291. ill. Wiley. 52*s*. (*Recd.* 26/8/53.)

PROCEEDINGS
OF THE
CHEMICAL SOCIETY

SCIENTIFIC MEETINGS DURING JANUARY, 1954

LONDON.

Thursday, January 21st, 1954, at 7.30 p.m.

The papers to be read and discussed will include the following :

" Steric relationships between ionisation of aralkyl chlorides and dissociation of anilinium ions." By G. Baddeley, J. Chadwick, and H. T. Taylor.

" Internuclear cyclisation. Part IX. Abnormal reactions of 2-amino-*N*-methylbenzanilides containing *ortho*-substituents." By D. H. Hey and D. G. Turpin.

To be held in the Rooms of the Society, Burlington House, W.1.

ABERDEEN.

Thursday, January 21st, 1954, at 7.30 p.m.

Lecture, **New Outlooks in Electrochemistry,** by Professor W. F. K. Wynne-Jones, D.Sc. Joint meeting with the Royal Institute of Chemistry and the Society of Chemical Industry. To be held at Robert Gordon's Technical College, Aberdeen.

BIRMINGHAM.

Friday, January 22nd, 1954, at 4.30 p.m.

Lecture, **Aromatic Substitution,** by Professor M. J. S. Dewar, M.A., D.Phil. Joint meeting with the University Chemical Society. To be held in the Department of Chemistry, The University.

BRISTOL.

Thursday, January 14th, 1954, at 7 p.m.

Lecture, **Cacao Diseases,** by Mr. R. V. Wadsworth, F.R.I.C. Joint meeting with the Royal Institute of Chemistry and the Society of Chemical Industry. To be held in the Department of Chemistry, The University.

Thursday, January 21st, 1954, at 7 p.m.

Lecture, **Some New Methods in Analytical Chemistry,** by Dr. R. Belcher, F.R.I.C. Joint meeting with the Royal Institute of Chemistry and the Society of Chemical Industry. To be held in the Department of Chemistry, The University.

EDINBURGH.

Thursday, January 14*th*, 1954, *at* 7.30 *p.m.*

Lecture, **The Stereochemistry of *cyclo*Hexane Derivatives,** by Professor D. H. R. Barton, Ph.D., D.Sc., F.R.I.C. Joint meeting with the Royal Institute of Chemistry and the Society of Chemical Industry. To be held at the North British Station Hotel, Edinburgh.

GLASGOW.

Friday, January 22*nd*, 1954, *at* 7.15 *p.m.*

Lecture, **The Investigation of Natural Products Derived from Wood,** by Professor F. E. King, M.A., Ph.D. To be given in The Royal Technical College.

HULL.

Thursday, January 21*st*, 1954, *at* 7.30 *p.m.*

Lecture by Professor J. C. Speakman, D.Sc., F.R.I.C. Joint meeting with the Royal Institute of Chemistry. To be held in the Chemistry Department, University College.

IRISH REPUBLIC.

Wednesday, January 27*th*, 1954, *at* 7.45 *p.m.*

Lecture, **Studies in the Chemistry of Flavones,** by Professor T. S. Wheeler, D.Sc., F.R.I.C. To be given in the Chemistry Department, Trinity College, Dublin.

LEEDS.

Monday, January 18*th*, 1954, *at* 6.30 *p.m.*

Royal Institute of Chemistry Lecture, **The Naturally Occurring Polyacetylenes,** by Professor B. Lythgoe, M.A., Ph.D. To be given in the Department of Chemistry, The University, Leeds. (All Fellows are invited.)

LIVERPOOL.

Thursday, January, 21*st*, 1954, *at* 5 *p.m.*

Lecture, **Fluorescence,** by Dr. E. J. Bowen, M.A., F.R.S. Joint meeting with the Royal Institute of Chemistry, the Society of Chemical Industry, British Association of Chemists, and the University Chemical Society. To be held in the Chemistry Lecture Theatre, The University.

MANCHESTER.

Thursday, January 28*th*, 1954, *at* 6.30 *p.m.*

Lecture, **Polymerisation and its Reversal,** by Professor F. S. Dainton, M.A., B.Sc., Ph.D. Joint meeting with the Royal Institute of Chemistry and the Society of Chemical Industry. To be held at The University.

NEWCASTLE AND DURHAM.

Friday, January 15th, 1954, at 5.30 p.m.

Bedson Club Lecture by Professor E. Baldwin. To be given in the Chemistry Department, King's College, Newcastle-on-Tyne. (All Fellows are invited.)

NOTTINGHAM.

Monday, January 25th, 1954, at 5 p.m.

Lecture, **Some Recent Progress in Natural Product Chemistry,** by Professor D. H. R. Barton, Ph.D., D.Sc., F.R.I.C. Joint meeting with Leicester University College Chemical Society. To be held at University College, Leicester.

Thursday, January 28th, 1954, at 4.45 p.m.

Lecture, **Structures and Configurations,** by Professor E. E. Turner, M.A., D.Sc., F.R.S. Joint meeting with the University Chemical Society. To be held at The University, Nottingham.

ST. ANDREWS AND DUNDEE.

Friday, January 15th, 1954, at 5.15 p.m.

Royal Institute of Chemistry Lecture, **Recent Advances in Inorganic Chromatography,** by Dr. F. H. Pollard, A.R.I.C. To be given in the Chemistry Department, United College, St. Andrews. (All Fellows invited.)

SHEFFIELD.

Thursday, January 28th, 1954, at 7.30 p.m.

Lecture, **Electron Diffraction in Gases applied to Inorganic Chemistry,** by Dr. L. E. Sutton, M.A., F.R.S. Joint meeting with Sheffield University Chemical Society. To be held in the Chemistry Lecture Theatre, The University.

SOUTH WALES.

Friday, January 15th, 1954, at 5.30 p.m.

Lecture, **Some Recent Developments in Theoretical Organic Chemistry,** by Professor M. J. S. Dewar, M.A., D.Phil. Joint meeting with the University College of Swansea Chemical Society. To be held at the University College.

Monday, January 25th, 1954, at 5.30 p.m.

Lecture, **Radiation Chemistry,** by Professor F. S. Dainton, M.A., Ph.D. To be given in the Chemistry Department, University College, Cardiff.

OFFICIAL ANNOUNCEMENTS

DEATHS.

The Council regrets to announce the deaths of the following Fellows :

	Elected.	Died.
Bertram Hennessey Bowles (Loughton)	Feb. 16th, 1899.	Sept. 30th, 1953
Colin Campbell (Manchester)	May 2nd, 1918.	Aug. 23rd, 1953.
Alexander Marcan (Hampstead)	Feb. 17th, 1910.	Aug. 12th, 1953.
James Pettigrew Ogilvie (London, E.C.3)	Feb. 15th, 1912.	Sept. 13th, 1953.
George Edward Wilson (Crewe)	Apr. 18th, 1944.	June 16th, 1953.

ACKNOWLEDGMENT.

Acknowledgment is made of a gift of the Society's publications from Mr. H. T. Farrar.

ELECTION OF NEW FELLOWS.

The following 22 candidates were elected Fellows of the Society on October 15th, 1953 :

Willem Constantyn Ahlers.
Mrs. Daisy Bogaert-Verhoogen.
James Nuttall Brough.
Ross Grant Donovan.
Angus John Duke.
Lyndon Harold Everett.
Eugene Farkas
James Ferguson.
Stanley Jensen Gill.
Alexander Henry Johnstone.
Anthony Harmsworth Kaye.
Eric Alfred Magnusson.
Nariman Bomanshaw Mehta.
Om Prakash Mittal.
Clarence James Moye.
Brian Trevor Newbold.
Narayana Palanikumaru Palaniappan.
Roger William Roeske.
Edward Reinier Swart.
Kurian Verghese.
Geoffrey Wilkinson.
Katherine Woods Wilson.

NEW SERVICES FOR FELLOWS.

The Council of the Chemical Society has approved plans for two new services to be available, from January 1954, to Fellows of the Society and others.

(a) "*Current Chemical Papers*." The Society is to commence the publication, under the above title, of a monthly classified world list of new papers in pure chemistry. The entries will include titles of papers (expanded where necessary), the authors' names, and the references to the original Journal. It is emphasised that this publication is not intended to become a substitute for an abstracting service, but it will advise research workers of newly published papers more rapidly than would be possible in a journal publishing full abstracts.

Current Chemical Papers will be available to Fellows at a price of £1 5*s*. per annum as part of the publications entitlement. The price for outside subscribers will be £2 10*s*. per annum. There will be no index.

(b) *Journal Reprint Service*. Offprints of individual papers published in the *Journal* will, from January 1954, be available from the Society. Fellows are invited to subscribe for one book of thirty vouchers available as part of the publications entitlement at a price of £1 10*s*. Each voucher, which will be valid for one year only, can be exchanged for one reprint of any paper selected from the *Journal*.

Additional vouchers (valid for three years) are available outside the publications allowance for Fellows and also for Libraries and other subscribers to the *Journal* at 10*s*. per book of five vouchers.

Single reprints may also be purchased by any applicant at 5*s*. per reprint.

FELLOWSHIP SUBSCRIPTION 1955.

The Council has approved a scheme whereby as from January 1955 the Annual Fellowship Subscription to the Chemical Society shall be reduced to Two Guineas. This subscription, which is conditional upon the necessary amendments to the Bye-Laws being approved by the Fellows at a General Meeting, will not carry any entitlement to publications other than the *Proceedings*. Publications will be available at Fellows' rates for those wishing to receive them.

The new subscription rate will also apply to Fellows under 27 years of age, who will, however, continue to receive, in addition to the *Proceedings*, the *Annual Reports* and *Quarterly Reviews*, without further payment.

The Council hopes that these new arrangements will meet the needs of those Fellows who wish to retain their association with the Society but for various reasons, *e.g.*, retirement, change of employment, etc., no longer require the full range of the Society's publications.

LIBRARY.

The Library will close for the Christmas Holidays at 1 p.m. on Wednesday, December 23rd, and re-open at 10 a.m. on Tuesday, December 29th.

INFRA-RED SPECTRA.

The deposition and sale scheme for infra-red spectra mentioned in *Proceedings*, December, 1952, page 165, is now in operation. According to this scheme, which is an intermediate measure, the Society accepts for deposit copies (on forms obtainable from the Society) of infra-red spectra referred to or published in papers in its journals as well as any which may be submitted to it by other publishing Societies. It should be emphasised that deposition of spectra is voluntary on the part of the author, in order that the spectra may be available in a form larger than can be published: it is not a condition of acceptance of papers for publication. Infra-red spectra of the substances in the list below are now available, and photocopies may be obtained on application to the General Secretary. Applications must state the C.S. number and be accompanied by a remittance of 3*s*. per copy per spectrum (post free). (Quotations for large numbers ordered at one time will be given on application.)

Continuation lists will be published quarterly in the *Proceedings*, and a composite annual list will be published in the Index Volume of the *Journal*.

C.S. No.	Name.	
	J., **1953**, 1199. Haszeldine and Steele.	
1	1 : 1 : 1-Trifluorobut-2-ene	$CF_3 \cdot CH{:}CH \cdot CH_3$
2	1-Chloro-3 : 3 : 3-trifluoroprop-1-ene	$CF_3 \cdot CH{:}CHCl$
3	3 : 3-Dichloro-1 : 1 : 1-trifluoropropane	$CF_3 \cdot CH_2 \cdot CHCl_2$
4	2 : 3-Dichloro-1 : 1 : 1-trifluoropropane	$CF_3 \cdot CHCl \cdot CH_2Cl$
5	1 : 1 : 1-Trifluoropropane	$CF_3 \cdot CH_2 \cdot CH_3$
6	3-Chloro-1 : 1 : 1-trifluoropropane	$CF_3 \cdot CH_2 \cdot CH_2Cl$
7	3-Bromo-1 : 1 : 1-trifluoropropane	$CF_3 \cdot CH_2 \cdot CH_2Br$
8	1 : 1 : 1-Trifluoro-3-iodopropane	$CF_3 \cdot CH_2 \cdot CH_2I$
9	1 : 1 : 1 : 3-Tetrafluoro-3-iodopropane	$CF_3 \cdot CH_2 \cdot CHFI$
10	1 : 1 : 1 : 3 : 5-Pentafluoro-5-iodopentane	$CF_3 \cdot CH_2 \cdot CHF \cdot CH_2 \cdot CHFI$
11	1 : 1 : 1 : 3-Tetrafluoropropane	$CF_3 \cdot CH_2 \cdot CH_2F$
12	1 : 3 : 3 : 3-Tetrafluoroprop-1-ene	$CF_3 \cdot CH{:}CHF$
13	Methyl γγγ-trifluoro-α-iodobutyrate	$CF_3 \cdot CH_2 \cdot CHI \cdot CO_2Me$
	J., **1953**, 1548. Haszeldine and Leedham.	
14	Perfluoropropionic acid	$C_2F_5 \cdot CO_2H$
15	Methyl perfluoropropionate	$C_2F_5 \cdot CO_2Me$
16	Ethyl perfluoropropionate	$C_2F_5 \cdot CO_2Et$
17	ααααββ-Pentafluoropropionamide	$C_2F_5 \cdot CO \cdot NH_2$
18	Perfluoropropionyl chloride	$C_2F_5 \cdot COCl$
19	Perfluoropropionic anhydride	$(C_2F_5 \cdot CO)_2O$
20	Perfluoropropionitrile	$C_2F_5 \cdot CN$
21	Nitron salt of perfluoropropionic acid	$C_{23}H_{17}O_2N_4F_5$

C.S. No.	Name.	
	J., 1953, 1552. Emeléus, Haszeldine, and Walaschewski.	
22	Tristrifluoromethylarsine	$As(CF_3)_3$
23	Iodobistrifluoromethylarsine	$(CF_3)_2AsI$
24	Chlorobistrifluoromethylarsine	$(CF_3)_2AsCl$
25	Fluorobistrifluoromethylarsine	$(CF_3)_2AsF$
26	Bistrifluoromethylarsine	$(CF_3)_2AsH$
27	Cyanobistrifluoromethylarsine	$(CF_3)_2As{\cdot}CN$
28	Methylbistrifluoromethylarsine	$(CF_3)_2As{\cdot}CH_3$
29	Tetrakistrifluoromethyldiarsine	$(CF_3)_2As{\cdot}As(CF_3)_2$
30	Di-iodo(trifluoromethyl)arsine	$CF_3{\cdot}AsI_2$
31	Dichloro(trifluoromethyl)arsine	$CF_3{\cdot}AsCl_2$
32	Trifluoromethylarsine	$CF_3{\cdot}AsH_2$
33	Tristrifluoromethylarsine dichloride	$(CF_3)_3AsCl_2$
34	Bistrifluoromethylarsinic acid	$(CF_3)_2AsO_2H$
35	Silver bistrifluoromethylarsinate	$(CF_3)_2AsO_2Ag$
	J., 1953, 1592. Haszeldine and Steele.	
36	1 : 1-Dichlorohexafluoropropane	$CF_3{\cdot}CF_2{\cdot}CFCl_2$
37	1 : 2-Dichlorohexafluoropropane	$CF_3{\cdot}CFCl{\cdot}CF_2Cl$
38	3 : 3-Dichloro-1 : 1 : 1 : 2 : 2 : 3-hexafluoropropane	$CF_3{\cdot}CF_2{\cdot}CFCl_2$
39	3 : 4-Dichlorododecafluorohexane	$(C_2F_5{\cdot}CFCl{\cdot})_2$
40	1-Chloroheptafluoropropane	$CF_3{\cdot}CF_2{\cdot}CF_2Cl$
41	1-Chlorohexafluoro-1-iodopropane	$CF_3{\cdot}CF_2{\cdot}CFClI$
42	Perfluorohex-3-ene	$C_2F_5{\cdot}CF{:}CF{\cdot}C_2F_5$
43	1 : 2 : 3 : 3 : 3-Pentafluoroprop-1-ene	$CF_3{\cdot}CF{:}CHF$
44	1 : 3-Dichlorononafluoro-1-iodopentane	$CF_3{\cdot}[CF_2{\cdot}CFCl]_2{\cdot}I$
45	1 : 1 : 3-Trichlorononafluoropentane	$CF_3{\cdot}CF_2{\cdot}CFCl{\cdot}CF_2{\cdot}CFCl_2$
46	3-Chloro-1 : 2 : 3 : 4 : 4 : 5 : 5 : 5-octafluoropent-1-ene	$CF_3{\cdot}CF_2{\cdot}CFCl{\cdot}CF{:}CHF$
	J., 1953, 2525. Haszeldine.	
47	Tribromonitromethane	$CBr_3{\cdot}NO_2$
48	Trichloronitromethane	$CCl_3{\cdot}NO_2$
	J., 1953, 2933. Elks, Evans, Robinson, Thomas, and Wyman.	
49	3β-Acetoxyergost-22-en-11-one	
50	3β-Acetoxy-9β-ergost-22-en-11-one	

INTERNATIONAL UNION OF CRYSTALLOGRAPHY.

The Third General Assembly and International Congress of the Union will be held in Paris from July 21st to 28th, 1954. Full details of the meeting are now available in the First Circular, copies of which may be obtained from the General Secretary of the Union (R. C. Evans, Crystallographic Laboratory, Cavendish Laboratory, Cambridge, England), from the Secretary of the Programme Committee (A. J. Rose, Laboratoire de Mineralogie, 1 rue Victor Cousin, Paris 5, France), or from any of the following regional representatives of the Programme Committee: G. Menzer (Universitatsinstitut fur Kristallographie and Mineralogie, Luisenstrasse 37/11, Munchen 2, Germany), W. H. Taylor (Crystallographic Laboratory, Cavendish Laboratory, Cambridge, England), J. D. H. Donnay (The John Hopkins University, Baltimore, Maryland, U.S.A.).

At the Congress papers will be presented on all aspects of crystallographic research; there will also be an exhibition of crystallographic apparatus and books. After the Congress two specialised Symposia will be held on "The Location and Function of Hydrogen" and "The Mechanism of Phase Transitions in Crystals," and there will be visits to localities of mineralogical interest. Offers of papers for the Congress and Symposia and notice of enrolment must reach the Secretary of the Programme Committee (preferably on the form accompanying the First Circular) by February 15th, 1954. All general correspondence should also be addressed to the Secretary of the Programme Committee.

MINUTES OF SCIENTIFIC MEETINGS

Minutes of a

SCIENTIFIC MEETING

held in the Lecture Theatre of the Royal Institution, Albemarle Street, London, W.1, on October 19th, 1953, at 7.30 p.m.

The President, PROFESSOR C. K. INGOLD, D.Sc., F.R.S., was in the Chair.

MINUTES.

The Minutes of the Scientific Meeting held at Burlington House on June 4th, 1953, were taken as read, and were confirmed and signed.

FORMAL ADMISSION OF FELLOWS.

The following were admitted Fellows of the Society: P. A. Start, E. F. Hockings, K. Blau, J. C. Clark, M. W. Hill, P. Smith, R. Littlewood, S. Flengas, D. T. G. Morgan, A. L. Odell, M. J. Lyons, A. Reveley, A. Brown.

TILDEN LECTURE.

After a brief introduction the President called upon Dr J. S. Anderson to deliver the Tilden Lecture entitled " The Mechanism of Reactions between Gases and Solids." At the conclusion of the Lecture, a vote of thanks to Dr. Anderson, proposed by Mr. H. M. Powell, was carried with acclamation.

LIST OF APPLICATIONS FOR FELLOWSHIP

(*Fellows wishing to lodge objection to the election of these candidates should communicate with the Honorary Secretaries within ten days of the date of publication of the* Journal *for November*, 1953. *Such objections will be treated as confidential. The forms of application are available in the Library.*)

Adkins, Aubyn Lester, M.S. (Calif.). American. 30, Highpoint, North Hill Street, Highgate, N.6. U.S. Naval Officer. *Signed by:* G. Szasz, S. R. Aspinall, J. C. Sheenan.

Allen, Albert Derrick, Ph.D. (Lond.). British. 105 Fitzjohn Avenue, Barnet, Herts. Lecturer, University College, London. *Signed by:* J. H. S. Green, C. A. Bunton, J. E. Connett.

***Attwood, Edwin Charles.** British. 106A, Rockley Road, Hamworthy, Poole, Dorset. University Student. *Signed by:* N. B. Chapman, I. G. M. Campbell, A. C. Riddiford.

Avery, Douglas John. British. 70 Melody Road, Wandsworth, S.W.18. Refractories Investigator with The Morgan Crucible Co. Ltd., Battersea. *Signed by:* W. Wardlaw, D. H. R. Barton, K. H. Overton.

***Barnard, Alan Keith,** B.Sc. (Leeds). British. 272, West Park Drive West, Roundhay, Leeds, 8, Research Student, Leeds University. *Signed by:* E. G. Cox, R. S. Bradley, P. A. Briscoe.

***Berry, John Allan,** B.Sc. (Wales). British. 30, Park Street, Kenfig Hill, Nr. Bridgend, Glam. Student. *Signed by:* K. W. Sykes, C. W. Shoppee, E. E. Ayling.

***Broatch, William Nicol,** B.Sc. (Edin.). British. 45, Allan Park Crescent, Edinburgh, 11. Research Student. *Signed by:* C. T. Greenwood, T. R. Bolam, J. Kendall.

***Charley, Reynold Vernon,** B.A. (Cantab.). British. 81, Weeping Cross, Stafford. Lecturer at St. John's College, Agra, India. *Signed by:* A. J. Harding, F. G. Mann, B. C. Saunders.

***Chernick, Cedric Louis,** B.Sc. (Manc.). British. 4 Park Hill, Bury Old Road, Prestwich, Manchester. Research Student. *Signed by:* G. R. Barker, H. A. Skinner, H. O. Pritchard.

***Cocking, Edward Charles Daniel,** B.Sc. (Bris.). British. 41, Addison Road, Wanstead, E.11. Post-graduate Research. *Signed by:* E. H. Pollard, J. K. N. Jones, D. D. Eley.

Dalling, Roger Charles, B.Sc. (Lond.). British. Cowley Cottage, Ray Park Road, Maidenhead, Berks. Research Chemist at Vandervell Products, Ltd., Maidenhead. *Signed by:* K. Schofield, H. T. S. Britton, S. J. Gregg.

***Davies, David Ian.** British. 9 Ridgeway Avenue, Newport, Mon. Chemistry Student at King's College, London. *Signed by:* S. H. Harper, K. C. Sleep, P. F. Ashworth.

*Duncan, William Alexander McIntosh, B.Sc. (Edin.). British. 14, Willowbrae Avenue, Edinburgh, 8. Research Student. *Signed by:* E. L. Hirst, A. G. Ross, D. J. Manners.

*Duns, Malcolm Louis. British. 22, Forestdale, Southgate, N.14. Student. *Signed by:* V. Gold, S. H. Harper, D. H. Hey.

*Elad, Dov, M.Sc. (Hebrew Univ. Jerusalem). Israeli. Weizmann Institute, Rehovot, Israel. Research Chemist. *Signed by:* D. Ginsburg, M. Halmann, D. H. Samuel.

*Fitt, Peter Stanley, B.Sc. (Lond.), A.R.C.S. British. The Red House, Tilford Road, Hindhead, Surrey. Postgraduate student at Imperial College. *Signed by:* L. N. Owen, R. P. Linstead, J. S. Fitt.

*Fox, Ian Stuart. British. 24, Mount Park Road, Ealing, W.5. Student at Imperial College. *Signed by:* R. P. Linstead, J. A. Elvidge, L. Crombie.

*Goldwhite, Harold, B.A. (Cantab.). British. 59, Addison Road, Hove 2, Sussex. Research Student. *Signed by:* G. M. K. Hughes, B. M. Roberts, K. P. G. Greenwood.

*Hallgarten, Peter Alexander, B.Sc. (Lond.). British. 10, Allington Road, London, N.W.4. Research Student. *Signed by:* M. M. Coombs, C. L. Arcus, L. W. F. Salame.

*Hellberg, Lars H., B.S. (Northwestern Univ.). American. Chemistry Department, University of California, Los Angeles 24, California, U.S.A. Teaching Assistant and Graduate Student in Chemistry. *Signed by:* T. L. Jacobs, I. S. Bengelsdorf, D. J. Cram.

*Hemmens, Walter Frank, B.A. (T.C.D.). Irish. Ounavarra, Ardee Road, Dundalk, Co. Louth, Ireland. Student. *Signed by:* W. Cocker, S. C. R. Meacock, W. R. N. Williamson.

*Holley, Thomas Frederick, B.A. and B.Sc. (T.C.D.). Irish. 10, Russell Street, Dublin, Eire. Research Student. *Signed by:* J. T. Edward, W. R. N. Williamson, W. Cocker.

Hood, Norman Roy, Ph.D., F.R.I.C., M.I.Mech.E., M.I.Chem.E. British. The British Paper and Board Industry Research Association, St. Winifred's, Welcomes Road, Kenley, Surrey. Director. *Signed by:* E. C. Allison, W. A. Akers, E. L. Hirst, M. Stacey.

*Ilse, Derek, M.Sc. (Pretoria). South African. National Chemical Research Laboratory, P.O. Box 395, Pretoria, S. Africa. Research Chemist, Council for Scientific and Industrial Research. *Signed by:* D. H. S. Horn, W. S. Rapson, D. A. Sutton.

*Johnston, Keith Mitchell. British. 26 Ivydale Road, London, S.E.15. Student at King's College, London. *Signed by:* S. H. Harper, K. C. Sleep, J. I. G. Cadogan.

*Kennedy, David Rankine, B.Sc. (Edin.). British. 17 Langside Crescent, Polbeth, West Calder, Midlothian. Student at Edinburgh University. *Signed by:* M. Ritchie, C. T. Greenwood, T. R. Bolam.

*Knee, Terence Edward Creasey. British. Trancledales, South Cave, East Yorks. Postgraduate and assistant at the Massachusetts Institute of Technology, U.S.A. *Signed by:* W. Cocker, E. Cocker, J. Edward.

Kresge, Alexander Jerry, B.A. (Cornell), Ph.D. (Ill.). American. Department of Chemistry, University College, Gower Street, London, W.C.1. Student. *Signed by:* C. K. Ingold, C. A. Bunton, E. D. Hughes.

Last, Roger Roy, B.Sc. (Lond.). British. Laurel House, Witnesham, Ipswich. Combustion Engineer. *Signed by:* A. F. Le C. Holding, C. M. Atkinson, J. F. McGhie.

*Lewis, Dennis Aubrey, B.Sc. (Lond.). British. 23 Bassett Road, London, W.10. Student. *Signed by:* J. McGhie, J. F. J. Dippy, S. Knight.

*Lucken, Edwin Anthony Charles, B.Sc. (Lond.). British. 38, Sandringham Road, Worcester Park, Surrey. Research Student. *Signed by:* M. M. Coombs, C. L. Arcus, L. W. F. Salame.

*Lyle, Richard Edward, S.B. (M.I.T.). American. 254 Noyes Laboratory, University of Illinois, Urbana, Illinois, U.S.A. Graduate Student. *Signed by:* D. Y. Curtin, E. J. Corey, A. S. Hay.

*McGill, Edmund Alan. British. 105 Woodside Road, Wood Green, N.22. Student at King's College, London. *Signed by:* S. H. Harper, K. C. Sleep, J. I. Cadogan.

*McIlmoyle, Pete Lewis. British. 74, Ossulton Way, Finchley, N.2. Undergraduate. *Signed by:* P. Sykes, W. G. Palmer, F. B. Kipping.

*Mackenzie, Donald James, B.Sc. (Edin.). British. 8 Greenbank Crescent, Edinburgh, 10. Research Student. *Signed by:* E. L. Hirst, T. R. Bolam, C. B. Wylam.

*Medcalf, Derek Charles. British. 19, Wellington Street, Hertford. Undergraduate. *Signed by:* R. P. Linstead, E. A. Braude, J. A. Elvidge.

*Newton, David Courtenay, B.Sc. (Lond.) British. 4 Glenville, Kettering Road, Northampton. Research Chemist. *Signed by:* J. B. Hartley, W. Siddall, D. Swaddle.

*Niedzwiedzki, Mark Andrew, B.A. (T.C.D.). British. 6 Mapesbury Road, London, N.W.2. Student. *Signed by:* V. C. Barry, W. Cocker, D. O'Tuama.

*Orton, Philip Malcolm, B.Sc. (Leeds). British. 32, Reynolds Street, Cleethorpes, Lincs. *Signed by:* A. D. Walsh, A. S. Carson, P. A. Briscoe.

*Parfitt, James Quested. British. 21, Limerick Road, Redlands, Bristol, 6. Student. *Signed by:* F. H. Pollard, T. J. Taylor, L. Hough.

*Parrick, John, B.Sc. (Nott.). British. 8, Bridge Street, Tutbury, Burton-on-Trent, Staffs. Organic Chemistry Research at Nottingham University. *Signed by:* C. C. Addison, A. R. Mathieson, J. C. Roberts.

*Peacock, Thomas Edward. British. 37 Wellesley Street, Jarrow, Co. Durham. Student at King's College, Durham. *Signed by:* W. F. K. Wynne-Jones, H. R. Thirsk, R. Raper.

***Perry, George Stanley,** B.Sc. (Lond.). British. 5, Queen's Gate Villas, Victoria Park Road, South Hackney, E.9. Production Chemist. *Signed by:* R. J. Wicker, H. Suschitzky, G. V. Boyd.

***Phillips, Peter Colin,** B.Sc. (Manc.). British. 19, Denison Road, Victoria Park, Manchester, 14. Research Student at Manchester University. *Signed by:* G. R. Barker, T. G. Halsall, M. C. Whiting.

***Porter, Jennifer Marise,** B.Sc. (Nott.). British. 84, Evington Lane, Leicester. Analytical Chemist, B.B. Chemical Co. *Signed by:* N. G. Reynolds, D. O. Jordan, C. C. Addison.

Porter, William James, M.P.S. British. 209, Chipstead Valley Road, Coulsdon, Surrey. Pharmaceutical Chemist. *Signed by:* R. Goode, F. Lord, G. A. H. Bosley.

***Powrie, Rhoderick Malcolm.** British. Seven Acres, Pakefield, Lowestoft, Suffolk. Undergraduate, University of Nottingham. *Signed by:* C. C. Addison, J. C. Roberts, D. D. Jordan.

***Price, Anthony John,** B.Sc. (Bris.). British. 10, Worcester Terrace, Clifton Park, Bristol, 8. Instructor Lieutenant, R.N. *Signed by:* F. H. Pollard, J. F. W. McOmie, B. Gilbert.

Rapson, Harry David Coleman, B.Sc. (Lond.) A.R.I.C. British. 307, Grenville House, Dolphin Square, London, S.W.1. Research Assistant, Imperial College. *Signed by:* F. C. Tompkins, B. Atkinson, J. A. Kitchener.

***Riley, Gordon,** B.Sc. (Birm.). British. 32, St. Thomas Street, Halliwell, Bolton, Lancs. Research Student. *Signed by:* W. Wilson, M. Stacey, E. J. Bourne.

***Rowe, Charles Ernest,** B.Sc. (Birm.). British. 35, Stechford Road, Ward End, Birmingham, 8. Chemist at Medical Research Council, Industrial Injuries and Burns Unit, Birmingham Accident Hospital. *Signed by:* E. S. Lane, E. J. Bourne, C. Ricketts.

***Sandilands, Michael Hope.** British. 170 The Crossways, Portchester, Hampshire. Student. *Signed by:* N. B. Chapman, K. R. Webb, E. Cartmell.

***Scholes, Stafford.** British. 90 Aragon Road, Morden, Surrey. Research Assistant, British Coal Utilisation Research Association. *Signed by:* D. H. R. Barton, W. Wardlaw, D. J. G. Ives.

***Shah, Jalal Uddin,** M.Sc. (Panjab). Pakistani. Organic Chemistry Department, Imperial College, London, S.W.7. Research Student. *Signed by:* R. P. Linstead, L. Crombie, O. H. Wheeler.

***Shaw, Charles James Granville.** British. Halliday Hall, South Side, Clapham Common, S.W.4. Student at King's College, London. *Signed by:* S. H. Harper, K. C. Sleep, P. F. Ashworth.

***Shingleton, Derek Alan.** British. 230 Montrose Avenue, Welling, Kent. Student at King's College, London. *Signed by:* S. H. Harper, K. C. Sleep, D. B. Smith.

Shiono, Ryonosuke. Japanese. Lyddon Hall, Viginia Road, Leeds, 2. Assistant of Physics Dept., Osaka University, Osaka, Japan. *Signed by:* E. G. Cox, J. A. S. Smith, F. S. Dainton.

***Smith, Robert Harry,** B.Sc. (Lond.). British. 19 Brighton Road, Coulsdon, Surrey. Research Officer, British Paper and Board Industry Research Association. *Signed by:* J. S. H. Davies, M. D. Ogden, K. S. W. Sing.

***Spoors, James Wheater,** B.Sc. (Manc.). British. 45 Beverly Road, Fallowfield, Manchester, 14. Research Student at University of Manchester. *Signed by:* G. R. Barker, M. C. Whiting, R. A. L. Wilson.

***Stowe, Bruce Bernot,** B.S. (Calif.), M.A. (Harvard). American. Harvard Biological Laboratories, 16 Divinity Avenue, Cambridge 38, Massachusetts, U.S.A. Graduate Student. *Signed by:* R. Mirza, W. D. Ollis, K. V. Thimann.

***Tayler, James Ludlow,** B.Sc. (Lond.), A.R.C.S. British. Imperial College Hostel, London, S.W.7. Research Student at Imperial College. *Signed by:* A. J. Clarke, B. W. Baker, L. Crombie.

***Taylor, Kenneth James.** British. 102 Eynsham Road, Cumnor Hill, Oxford. Assistant Experimental Officer, A.E.R.E., Harwell. *Signed by:* F. Hudswell, H. Small, E. J. H. Birch.

***Thorne, Melanie Patricia,** B.Sc. (Lond.). British. Tower House, Dartmouth, Devon. Student. *Signed by:* T. G. Bonner, A. G. Foster, K. Singer.

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PAPERS RECEIVED

(List of papers received between September 25th and October 23rd, 1953.)

" Steroids. Part IX. 22 : 23-Dichloroergosta-7 : 9(11)-dien-3β-yl acetate (ergosteryl-D acetate 22 : 23-dichloride)." By JOHN PATERSON and F. S. SPRING.

" Steroids. Part X. 7- and 11-Oxosteroids from 22 : 23-dibromo-7ξ : 11α-dihydroxyergost-8-en-3β-yl acetate." By DUNCAN MACLEAN and F. S. SPRING.

" Elimination of water from glycols. Dehydration of racemic 1 : 4-glycols derived from acenaphthene." By ROBERT ROGER and DAVID M. SHEPHERD.

" Studies on bond type in certain cobalt complexes. Part V. The exchange reactions of cobaltous *o*-phenanthroline and tripyridyl complexes." By BRUCE O. WEST.

" Synthesis of some carboxybutenolide derivatives." By D. E. AMES, R. E. BROWN, and T. F. GREY.

" Michael condensations with substituted sorbic esters. Part I. Methyl 2-*iso*butenylpropane-1 : 1 : 3 : 3-tetracarboxylate." By EVANS B. REID and H. WILLIAM SAUSE.

" The reduction of some carbonyl compounds with sodium borohydride." By EVANS B. REID and JOEL R. SIEGEL.

" Experiments with 4-hydroxy-6-phenyl-5 : 6-dihydro-2-pyrone. Part II. The hydrolysis of an α-bromo-β-oxo-δ-lactone by bases." By EVANS B. REID and JOEL R. SIEGEL.

" Experiments with 4-hydroxy-6-phenyl-5 : 6-dihydro-2-pyrone. Part III. The reduction of an αα-dibromo-β-oxolactone by bases." By EVANS B. REID and JOEL R. SIEGEL.

" Titanium tetrachloride as a catalyst in the Friedel–Crafts reaction. Part III. Alkylation with alkyl chlorides." By N. M. CULLINANE and D. M. LEYSHON.

" Synthetical experiments in the *cyclo*heptatrienone series. Part III. Syntheses of puberulic acid and *iso*stipitatic acid." By R. B. JOHNS, A. W. JOHNSON, and J. MURRAY.

" The oxidation of cellobiose by periodate." By F. S. H. HEAD and G. HUGHES.

" A statistical study of some olefinic absorption bands in the infra-red region." By R. L. WERNER and P. D. LARK.

" The crystal structures of the acid salts of some monobasic acids. Part IV. Ammonium hydrogen disalicylate hydrate." By T. C. DOWNIE and J. C. SPEAKMAN.

" Absorption spectra of ketones. Part I. α-Halogeno-ketones." By R. C. COOKSON.

" 2-Acetamido-7-methoxyfluorene." By JOHN H. WEISBURGER and ELIZABETH K. WEISBURGER.

" The halogenation of 2-methoxy-1-acetonaphthalide." By F. BELL.

" Elimination of *N*-substituents from derivatives of 1-aminoanthraquinone." By WILLIAM BRADLEY and ROY F. MAISEY.

" Note on the conductance equation." By J. DALY and M. ROTHMAN.

" Wool wax. Part VI. The synthesis and stereochemistry of the straight-chain α-hydroxy-acids." By D. H. S. HORN and (MISS) Y. Y. PRETORIUS.

" Friedelin and *epi*friedelinol from *Ceratopetalum apetalum* D. Don." By P. R. JEFFERIES.

" Epimeric alcohols of the *cyclo*hexane series. Part X. (±)-*trans*-3-Methyl*cyclo*hexanecarboxylic acid and (±)-*trans*-3-methyl*cyclo*hexylamine." By F. R. HEWGILL, P. R. JEFFERIES, and A. KILLEN MACBETH.

" *p*-Menthane-2 : 3-diols. Part IV. The reaction of mercuric acetate with (±)-menthone and (±)-*iso*menthone." By P. R. JEFFERIES, A. KILLEN MACBETH, and B. MILLIGAN.

" The retardation of benzaldehyde autoxidation. Part VI. The actions of a number of polycyclic aromatic hydrocarbons of carcinogenic interest." By J. R. DUNN, WILLIAM A. WATERS, and (in part) IVAN M. ROITT.

" *iso*Oxazolones. Part VI. The hydrogenation of 5-amino*iso*oxazoles. A new synthesis of pyrimidines." By G. SHAW and (MRS.) G. SUGOWDZ.

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" Studies in the steroid group. Part LXVI. Reactions of 11-hydroxy- and 11-oxo-5α-steroids." By A. CRAWSHAW, H. B. HENBEST, and E. R. H. JONES.

" Studies in the steroid group. Part LXVII. Formation of ergost-14-ene-3β : 5α-diol and related compounds." By PETER BLADON.

" Studies of trifluoroacetic acid. Part X. The mechanisms of syntheses effected by solutions of oxyacids in trifluoroacetic anhydride." By E. J. BOURNE, J. E. B. RANDLES, M. STACEY, J. C. TATLOW, and J. M. TEDDER.

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MINISTRY OF SUPPLY. Selected Government Research Reports. Vol. 10. Ceramics and glass. London 1952. pp. [iv] + 148. ill. H.M.S.O. 25*s*. (*Recd.* 7/10/53.)

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,,	D. W. Broad, Ph.D., A.R.I.C., Imperial Chemical Industries, Ltd., Research Department, Widnes Laboratory, Widnes.
Manchester.	G. R. Barker, B.Sc., Ph.D., Chemistry Department, The University, Manchester, 13.
,,	M. A. T. Rogers, B.Sc., Ph.D., A.R.I.C., Imperial Chemical Industries Ltd., Hexagon House, Blackley, Manchester.
Newcastle and Durham.	G. A. Swan, B.Sc., Ph.D, F.R.I.C., Department of Chemistry, King's College, Newcastle-on-Tyne, 1.
New Zealand.	Professor S. N. Slater, M.Sc., D.Phil., A.R.I.C., Chemistry Department, Victoria University College, Wellington, New Zealand.
Northern Ireland.	R. G. R. Bacon, Ph.D., A.R.C.S., Chemistry Department, Queen's University, Belfast.
North Wales.	J. E. McKail, Ph.D., Department of Chemistry, University College of North Wales, Bangor.
Nottingham.	C. C. Addison, D.Sc., Ph.D., F.R.I.C., Chemistry Department, The University, University Park, Nottingham.
Oxford.	H. M. N. H. Irving, M.A., D.Phil., F.R.I.C., Inorganic Chemistry Laboratory, South Parks Road, Oxford.
Pakistan.	M. I. D. Chughtai, M.Sc.Tech., Ph.D., A.R.I.C., Punjab University Institute of Chemistry, The Mall, Lahore, Pakistan.
St. Andrews and Dundee.	H. T. Openshaw, M.A., D.Phil., Chemistry Department, United College, St. Andrews.
Sheffield.	H. J. V. Tyrrell, M.A., B.Sc., Chemistry Department, The University, Sheffield, 10.
South Africa.	Professor W. Pugh, Ph.D., B.Sc., F.R.I.C., Chemistry Department, University of Cape Town, Rondebosch, S. Africa.
Southampton.	N. B. Chapman, M.A., Ph.D., A.R.I.C., Department of Chemistry, The University, Southampton.
South Wales.	K. W. Sykes, M.A., B.Sc., D.Phil., Department of Chemistry, University College, Singleton Park, Swansea.

PROCEEDINGS

OF THE

CHEMICAL SOCIETY

SCIENTIFIC MEETINGS DURING FEBRUARY, 1954

LONDON.

Thursday, January 21st, 1954, *at* 7.30 *p.m.*

Meeting for the Reading of Original Papers. To be held in the Rooms of the Society, Burlington House, W.1.

Thursday, February 4th, 1954, *at* 2.30 *p.m. and* 7.30 *p.m.*

Symposium, **Kinetics and Mechanism of Inorganic Reactions in Solution. A Survey of Recent Work.** It is expected that the following will take part—Dr. J. H. Baxendale, Professor F. S. Dainton, M.A., Ph.D., Dr. R. Hurst, G.M., M.Sc., Professor C. K. Ingold, D.Sc., F.R.S., Dr. H. M. Irving, M.A., F.R.I.C., Dr. K. W. Sykes, M.A., Dr. R. G. Wilkins.

To be held in the Rooms of the Society, Burlington House, W. 1.

ABERDEEN.

Thursday, February 18th, 1954, *at* 7.30 *p.m.*

Lecture, **The Scientific Examination of Paintings,** by Dr. A. E. Werner, M.A., M.Sc., D.Phil. Joint meeting with the Royal Institute of Chemistry and the Society of Chemical Industry. To be held at Robert Gordon's Technical College.

BRISTOL.

Thursday, February 4th, 1954, *at* 7 *p.m.*

Lecture, **The Radiochemical Centre at Amersham,** by Dr. W. P. Grove. Joint meeting with the Royal Institute of Chemistry and the Society of Chemical Industry. To be held in the Department of Chemistry, The University.

Wednesday, February 17th, 1954, *at* 7 *p.m.*

Lecture, **The Use of Radiochemical Methods in Analysis,** by Mr. A. Smales, B.Sc., F.R.I.C. Joint meeting with the Royal Institute of Chemistry and the Society of Chemical Industry. To be held at The Technical College, Gloucester.

CAMBRIDGE.

Friday, February 5th, 1954, *at* 8.30 *p.m.*

Lecture, **Reactions in Liquid Dinitrogen Tetroxide,** by Dr. C. C. Addison, F.R.I.C. Joint meeting with the University Chemical Society. To be held in the Chemical Laboratory, The University.

Friday, February 19th, 1954, *at* 8.30 *p.m.*

Lecture, **Usnic Acid and Related Topics,** by Professor A. Robertson, M.A., Ph.D., F.R.S. Joint meeting with the University Chemical Society. To be held in the Chemical Laboratory, The University.

EDINBURGH.

Tuesday, February 2nd, 1954, at 7 p.m.

Lecture, **New Kinds of Big Molecules,** by Professor H. W. Melville, F.R.S. Joint meeting with the Royal Institute of Chemistry, Society of Chemical Industry, and the University Chemical Society. To be held in the Biochemistry Lecture Theatre, Teviot Place, Edinburgh.

Thursday, February 18th, 1954, at 8 p.m.

Lecture, **Recent Progress in the Study of Metallic Corrosion,** by Dr. W. H. J. Vernon, O.B.E. Joint meeting with the Royal Institute of Chemistry and the Society of Chemical Industry. To be held in the North British Station Hotel, Edinburgh.

EXETER.

Friday, February 12th, 1954, at 5.0 p.m.

Lecture, **The Chemical Effects of Nuclear Transformations,** by Dr. A. G. Maddock. Joint meeting with the Royal Institute of Chemistry. To be held in the Washington Singer Laboratories.

GLASGOW.

Friday, February 19th, 1954, at 7.0 p.m.

Annual General Meeting of local Fellows followed by a meeting for the Reading of Original Papers. To be held at The University.

HULL.

Thursday, February 18th, 1954, at 6.0 p.m.

Lecture, **Allene Chemistry,** by Professor E. R. H. Jones, D.Sc., Ph.D., F.R.I.C., F.R.S. Joint meeting with the University College Scientific Society. To be held in the Chemistry Department, University College.

LEEDS.

Monday, February 15th, 1954, at 6.30 p.m.

Royal Institute of Chemistry Lecture, **Corrosion Theory in Practice,** by Dr. T. P. Hoar, M.A., F.R.I.C. To be given in the Chemistry Lecture Theatre, The University. (All Fellows are invited).

MANCHESTER.

Thursday, February 25th, 1954, at 6.30 p.m.

Lecture, **Some Problems in the Chemistry of Polypeptides,** by Professor H. N. Rydon, D.Sc., F.R.I.C. To be given in the Large Chemistry Theatre, The University.

NEWCASTLE AND DURHAM.

Friday, February 19th, 1954, at 4 p.m.

Meeting for the reading of original papers. To be held in the Chemistry Building, King's College, Newcastle-on-Tyne.

Friday, February 26th, 1954, at 5.30 p.m.

Bedson Club Lecture, **Adhesion and Surface Properties of Solids,** by Dr. F. P. Bowden, F.R.S. To be given in the Chemistry Building, King's College, Newcastle-on-Tyne. (All Fellows invited.)

NORTHERN IRELAND.

Wednesday, February 17th, **1954,** *at* **7.15** *p.m.*

Lecture, **Krilium Soil Conditioner,** by Dr. A. J. Lloyd. Joint meeting with the Society of Chemical Industry. To be held in the Agriculture Lecture Theatre, Queen's University, Belfast.

NOTTINGHAM.

Tuesday, February 9th, **1954,** *at* **4.45** *p.m.*

Lecture, **Recent Advances in the *X*-Ray Study of Complex Molecules,** by Professor J. M. Robertson, M.A., D.Sc., F.R.S. Joint meeting with the University Chemical Society. To be held at The University.

Thursday, February 25th, **1954,** *at* **4.45** *p.m.*

Lecture by Professor H. C. Longuet-Higgins, M.A., D.Phil. Joint meeting with the University Chemical Society.

ST. ANDREWS AND DUNDEE.

Friday, February 5th, **1954,** *at* **5.15** *p.m.*

Lecture, **Atoms and Molecules in Cages,** by Mr. H. M. Powell, B.Sc., M.A., F.R.S. Joint meeting with St. Andrews University Chemical Society. To be held in the Chemistry Department, United College, St. Andrews.

Thursday, February 11th, **1954,** *at* **5.15** *p.m.*

Lecture, **The Structure of Flames,** by Dr. J. W. Linnett, M.A. To be given in the Chemistry Department, University College, Dundee.

Friday, February **19th, 1954,** *at* **5.15** *p.m.*

Lecture, **Some Naturally Occurring Polyacetylenes,** by Professor B. Lythgoe, M.A., Ph.D. Joint meeting with St. Andrews University Chemical Society. To be held in the Chemistry Department, United College, St. Andrews.

Friday, February 19th, **1954,** *at* **7** *p.m.*

Royal Institute of Chemistry Lecture, **The Sterols—Their Chemistry and Metabolism,** by Dr. R. P. Cook. To be given in the Chemistry Department, University College, Dundee. (All Fellows invited.)

Thursday, February 25th, **1954,** *at* **5.15** *p.m.*

Chemistry Department Lecture, **Steel,** by Sir Charles Goodeve, F.R.S. To be given in the Chemistry Department, University College, Dundee. (All Fellows invited.)

Friday, February 26th, **1954,** *at* **5.15** *p.m.*

Lecture, **The Structure and Properties of Synthetic Polypeptides,** by Dr. C. H. Bamford, M.A., A.R.I.C. Joint meeting with St. Andrews University Chemical Society. To be held in the Chemistry Department, United College, St. Andrews.

SHEFFIELD.

Thursday, February 11th, **1954,** *at* **7.30** *p.m.*

Lecture, **Modern Fluorine Chemistry,** by Dr. R. N. Haszeldine. Joint meeting with Sheffield University Chemical Society. To be held in the Chemistry Lecture Theatre, The University.

SOUTHAMPTON.

Friday, February 12th, 1954, *at* 5 *p.m.*

Lecture, **Photochemical and Spectroscopic Methods of Studying Fast Reactions,** by Professor R. G. W. Norrish, Sc.D., F.R.S. Joint meeting with Southampton University Chemical Society and the Royal Institute of Chemistry. To be held in the Chemistry Department, The University.

Friday, February 26th, 1954, *at* 5 *p.m.*

Lecture, **The Chemical Nature of Some Metal Alkyls,** by Professor G. E. Coates, M.A. Joint meeting with Southampton University Chemical Society. To be held in the Chemistry Department, The University.

SOUTH WALES.

Monday, February 15th, 1954, *at* 5.30 *p.m.*

Lecture, **Recent Work on Organic Inclusion Compounds and their Uses,** by Professor W. Baker, M.A., D.Sc., F.R.S. To be given in the Chemistry Department, University College, Cardiff.

OFFICIAL ANNOUNCEMENTS

DEATHS.

The Council regrets to announce the death, in July last, of Nikolai Dimitrievich Zelinski, an Honorary Fellow of the Society, and of the following Fellows :

	Elected.	Died.
Arthur Broughton Broughton-Edge (Broughton-in-Furness)	June 20th, 1918.	Oct. 8th, 1953.
Leslie Marshall Clark (Northwich)	June 18th, 1925.	Sept. 26th, 1953.
Bernard Mouat Jones (Farnham)	Feb. 18th, 1905.	Sept. 12th, 1953.
James Rex Naylor (Birtle)	May 8th, 1952.	Oct. 18th, 1953.
Lewis Henry Phillips (Basingstoke)	Nov. 18th, 1943.	Nov. 9th, 1953.
William Smith (Grangemouth)	Mar. 4th, 1948.	Oct. 18th, 1953.

CONGRATULATIONS.

The President has conveyed the congratulations of the Society to Professor Hans Adolf Krebs, who has been awarded the Nobel Prize for medicine.

ACKNOWLEDGMENTS.

Acknowledgment is made of gifts of the Society's publications from Mr. F. O. Isaac and Mr. J. Venters.

ELECTION OF NEW FELLOWS.

The following 41 candidates were elected Fellows of the Society on November 19th, 1953 :

John James Andrews.
James Robert Barnard.
Thomas Norman Bell.
Raymond Milton Boroughs.
Robert Dixon Brown.
Alan John Chalk.
Chao-Tung Chen.
Eugene L. Cohen.
Joseph George Crist.
George Stephen Dickinson.
Fathy Mossad Ebeid.
Robert Ehrlich.
Henry Morris Eiland.
Manuel Finkelstein.
Hylton Peter Green.
Oswyn K. Hammond.
Jessie Evelyn Hay.
Minocher Dadabhoy Karkhanavala.
Robert E. Krall.
Peter Rodway Leeming.
Anthony Mapletoft Leonard.
David Anthony Lomax.
John Hickman Moss.
John Arthur Mottram.
Aaron Louis Nelson.
Ram Chand Paul.
Alun Hywel Rees.
Alice Gertrude Renfrew.
Robert Summer Rouse.
Ann Mary Salaman.
Nison Mane Skuy.
Hilary Muir Smith.
Ievan Trevor Smith.
David Henry Solomon.
John Robert Tetaz.
William Henderson Scott Thomson.
John C. Tsangalakis.
Gordon Harlow Whitham.
Walter H. Wolf.
Phil Stratford Work.
Ronald Jerome Young.

VACANCIES ON COUNCIL.

In accordance with the Bye-laws, the following vacant places in the Council fall due to be filled at the Annual General Meeting to be held in Manchester on Friday, April 2nd, 1954 :

Office.	No. of vacancies.	Names of Members who are due to retire.
President	ONE	Professor C. K. Ingold.
Vice-Presidents who have filled the Office of President	ONE	Professor F. G. Donnan.
Vice-Presidents who have not filled the Office of President	THREE	Professor G. R. Clemo. Professor D. H. Hey. Professor M. Stacey.

Elected Ordinary Members of Council:

Office.	No. of vacancies.	Names of Members who are due to retire.
Constituency I (South-East England)	TWO	Mr. H. M. Powell. Dr. J. W. Smith.
Constituency II (Central and South-West England and South Wales)	TWO	Professor W. Baker. Professor C. W. Shoppee.
Constituency III (North-West England, North Wales and Isle of Man)	ONE	Dr. G. Baddeley.
Constituency IV (North-East England)	ONE	Dr. T. S. Stevens.
Constituency V (Scotland)	ONE	Dr. J. Bell.
Constituency VI (Ireland)	ONE	Professor A. R. J. P. Ubbelohde.

Mr. R. P. Bell who was appointed an additional Ordinary Member of Council under Bye-law 19 retires from the Council without creating an additional vacancy. The members who are to retire are not eligible for re-election to the same Office until after a lapse of one year.

No vacancy arises for the Office of Honorary Secretary.

In accordance with Bye-law 23, the Council has nominated Professor W. Wardlaw to fill the vacancy in the Office of President. In accordance with Bye-law 47, Professor C. K. Ingold becomes a Vice-President, who has filled the Office of President. Nominations by Fellows for the Offices of President and of Vice-President who has not filled the Office of President should be made in writing and must be *signed by at least twenty Fellows*.

Fellows resident in a constituency may nominate any Fellow resident in that constituency for election to the Council to fill a vacancy among Elected Ordinary Members of Council allotted to that constituency. Every such nomination must be in writing *signed by at least fifteen Fellows resident in that constituency*.

Fellows may obtain forms of nomination from the General Secretary and should state the vacancy for which they are requested. Every nomination must relate to one vacant place only, and must be accompanied by a signed declaration by the nominee that he is willing to accept office, if elected. Nominations must be received by the Society not later than Monday, February 15th, 1954.

ANALYTICAL ABSTRACTS.

As has already been announced, the publication of Abstracts by the Bureau of Abstracts is to cease at the end of 1953. The Society of Public Analysts and Other Analytical Chemists is to continue the publication of Abstracts in analytical chemistry, and these will be available to Fellows of the Chemical Society and members of other scientific societies represented on the Chemical Council, at the special price of 30*s*. per annum, including the Index. An edition printed on one side of the paper will also be available, price 37*s*. per annum, without the Index. Fellows wishing to purchase *Analytical Abstracts* should communicate with the Secretary of the Society of Public Analysts and Other Analytical Chemists, 7–8 Idol Lane, London, E.C.3.

MINUTES OF SCIENTIFIC MEETINGS

Minutes of a

SCIENTIFIC MEETING

held at the Imperial College of Science and Technology, London, S.W.7, on November 5th, 1953, at 7.30 p.m.

The President, PROFESSOR C. K. INGOLD, D.Sc., F.R.S., was in the Chair.

MINUTES.

The Minutes of the Scientific Meeting held at the Royal Institution on October 19th, 1953, were read, and were confirmed and signed.

FORMAL ADMISSION OF FELLOWS.

The following were admitted Fellows of the Society: J. P. Ringe, A. Nickon, B. W. Baker, A. J. Clarke, J. C. Orr, L. H. Everett, R. P. Reeves, H. Feiner, C. R. Humphrey-Smith, R. B. Johns, S. Ridgwell, C. Franklin, S. D. Smith, D. M. Aten, E. W. Warnhoff, A. G. Peto, A. A. Sayed, J. C. Sheehan, D. Kingston, I. R. H. Crail, N. McKelvie.

TILDEN LECTURE.

After a brief introduction the President called upon Dr. A. W. Johnson to deliver the Tilden Lecture entitled "Aromatic Character in Seven-membered Ring Systems." At the conclusion of the Lecture, a vote of thanks to Dr. Johnson, proposed by Professor J. W. Cook, was carried with acclamation.

Minutes of a

SCIENTIFIC MEETING

held at the Institution of Civil Engineers, London, S.W.1, on November 19th, 1953, at 7.30 p.m.

The President, PROFESSOR C. K. INGOLD, D.Sc., F.R.S., was in the Chair.

MINUTES.

The Minutes of the Scientific Meeting held at the Imperial College of Science and Technology, on November 5th, 1953, were read, and were confirmed and signed.

FORMAL ADMISSION OF FELLOWS.

The following were admitted Fellows of the Society: A. Tiselius, R. P. Buckley, D. M. Adams, K. T. Scott, R. Bowen.

CENTENARY LECTURE.

After a brief introduction the President called upon Professor A. Tiselius to deliver the Centenary Lecture entitled "Some Applications of the Separation of Large Molecules and Colloidal Particles." At the conclusion of the lecture, a vote of thanks to Professor Tiselius, proposed by the President, was carried with acclamation.

LIST OF APPLICATIONS FOR FELLOWSHIP

(*Fellows wishing to lodge objection to the election of these candidates should communicate with the Honorary Secretaries within ten days of the date of publication of the* Journal *for December, 1953. Such objections will be treated as confidential. The forms of application are available in the Library.*)

***Abercrombie, Malcolm James.** British. 290 Woodgrange Drive, Southend-on-Sea, Essex. Student. *Signed by:* F. H. Pollard, E. R. Sayer, D. F. Downing.

Akisanya, Akitunde, B.Sc. (Lond.) British. c/o Ijebu-Ode Grammar School, P.O. Box 37, Ijebu-Ode, Nigeria, B.W. Africa. Senior Science Master. *Signed by:* L. Hunter, E. R. A. Peeling, C. Eaborn.

***Ayerst, Gordon Geoffrey.** British. 89 Midhurst Road, West Ealing, W.13. Student. *Signed by:* R. King, K. Schofield, S. J. Gregg.

***Barr, Dennis Arthur,** B.Sc. (Lond.). British. 101 Nevill Road, London, N.16. Research Student. *Signed by:* R. N. Haszeldine, A. G. Sharpe, B. O. West.

***Bell, Ian,** B.Sc. (Manc.). British. 18 Park Drive, Wistaston, Crewe. Research Student. *Signed by:* G. R. Barker, M. C. Whiting, J. L. Allen.

***Blackie, Merrick Stuart.** British. 17 Woodrock Road, Woolton, Liverpool. Student at King's College, London. *Signed by:* S. H. Harper, K. C. Sleep, D. B. Smith.

*__Bonnett, Raymond.__ British. Roselyn, Lakenheath, Nr. Brandon, Suffolk. Student at Imperial College. *Signed by:* J. A. Elvidge, R. P. Linstead, M. Whalley.

*__Bruce, John Malcolm,__ B.Sc. (Lond.). British. 13 Parkfield Road, Nab-Wood, Shipley, Yorks. Research Student at Leeds University. *Signed by:* R. Hemming, D. G. Lewis, S. D. Holdsworth.

*__Cox, Brian,__ B.A. (Cantab.). British. St. Catharine's College, Cambridge. Research Student. *Signed by:* A. G. Sharpe, F. S. Kipping, V. M. Clark.

*__Cox, Eugene Floyd,__ B.S. and M.S. (Georgia). American. Gates and Crellin Laboratories, California Institute of Technology, Pasadena, California, U.S.A. Student at California Institute of Technology. *Signed by:* W. N. White, E. J. Smutny, C. Y. Almond.

*__Cox, James Stuart Gordon,__ B.Sc. (Lond.). British. 20 Calstock Road, Woodthorpe, Nottingham. Research Student at University of Nottingham. *Signed by:* T. J. King, J. C. Roberts, N. N. Greenwood, C. C. Addison, A. R. Mathieson.

*__Creasey, William Alfred.__ British. 22 Neate Street, Camberwell, S.E.5. Biochemistry Student at Oxford University. *Signed by:* H. Irving, F. M. Brewer, S. G. P. Plant.

*__Crespi, Romeo Stefano,__ B.Sc. (Lond.). British. 30 Dyne Road, London, N.W.6. Technical Assistant. *Signed by:* B. C. Reid, W. V. Higgs, B. London.

*__Davidson, James Roy,__ B.Sc. (Glas.). British. 9 Garvock Drive, Glasgow, S.3. Research Chemist. *Signed by:* F. D. Gunstone, N. Grassie, J. W. Cook.

*__Ebison, Maurice George.__ British. "Mon-Abri," Kingsway, Woking, Surrey. Student at Cambridge University. *Signed by:* A. G. Sharpe, G. Porter, W. H. Mills.

*__Elworthy, Peter Howard,__ B.Pharm. (Lond.). British. 20 Emerson Drive, Hornchurch, Essex. Research Student at London University. *Signed by:* W. H. Linnell, L. Saunders, L. K. Sharp.

*__Evans, John Edward Francis.__ Irish. Clontail, Drumcondrath, Drogheda, Co. Louth, Eire. Student. *Signed by:* W. Cocker, W. R. N. Williamson, S. C. R. Meacock.

*__Floyd, Arthur John.__ British. 2 York Road, Bournemouth, Hants. Undergraduate at Bristol University. *Signed by:* H. F. Pollard, W. Baker, J. F. W. McOmie.

*__Gilmont, Ernest R.,__ A.B. and M.Sc. (Middlebury Coll.). American. 160 Elgin Street, Newton Centre 59, Massachusetts, U.S.A. Predoctoral Fellow at Massachusetts Institute of Technology. *Signed by:* D. W. H. MacDowell, H. O. House, C. G. Swain.

*__Harrison, Stanley Richard,__ B.Sc. (Lond.). British. 18a Ermington Crescent, Castle Bromwich, Birmingham, 34. Research Chemist at the Dunlop Rubber Co. Ltd. *Signed by:* I. Riley, T. Bird, W. Cooper.

__Hellman, J. Walter,__ A.B. (Michigan). American. 78–17 Park Drive East, Flushing, 67, New York, U.S.A. Teaching Fellow at New York University. *Signed by:* S. C. Dickerman, K. Mislow, W. C. Meluch.

*__Jackson, Thomas Victor.__ British. 4 Arranmore Road, Herbert Park, Dublin. Student. *Signed by:* W. Cocker, S. C. R. Meacock, W. R. N. Williamson.

*__Lake, Alan Wainwright.__ British. 23 Alexander Avenue, Halton, Leeds. Research Chemist at Henry W. Peabody (Industrial) Ltd., S.E.1. *Signed by:* A. S. C. Lawrence, D. H. Peacock, H. J. V. Tyrrell.

*__Lassman, Jack.__ British. 111 Bishop's Way, Cambridge Heath, London, E.2. Student. *Signed by:* R. N. Haszeldine, F. B. Kipping, J. Harley-Mason.

*__Long, Richard Arthur John.__ British. Lyndon, Dean Lane, Winchester, Hants. Student at King's College. *Signed by:* S. H. Harper, D. H. Hey, D. W. G. Style.

__Lovett, Stanley,__ A.R.I.C. British. Bishopdown House, St. Marks Avenue, Salisbury, Wilts. Experimental Officer, Ministry of Supply. *Signed by:* L. Munday, H. G. de Laszlo, L. H. Kent.

*__McCarthy, Brian John.__ British. 126 Brockley Rise, Forest Hill, S.E.23. Chemistry Student at Oxford University. *Signed by:* H. Irving, F. M. Brewer, S. G. P. Plant.

*__McMurry, Thomas Brian Hamilton,__ B.A. (T.C.D.). Irish. Cullsden, Wyndham Park, Bray, Co. Wicklow, Eire. Research Student. *Signed by:* W. Cocker, W. R. N. Williamson, S. C. R. Meacock.

*__Millar, Ian Torrance,__ B.Sc. (Lond.), Ph.D. (Cantab.), A.R.I.C. British. University Chemical Laboratory, Pembroke Street, Cambridge. Research Student. *Signed by:* F. G. Mann, R. N. Haszeldine, B. O. West.

*__Mills, Allan Alfred.__ British. 41 Chadacre Road, Stoneleigh, Ewell, Surrey. Student at University of Nottingham. *Signed by:* W. F. Wyss, S. C. Wallwork, J. C. Roberts.

*__Nyman, Frank,__ B.Sc. (Lond.). British. 36 Milborne House, Mead Place, Hackney, E.9. Research Student at Cambridge University. *Signed by:* R. N. Haszeldine, A. G. Sharpe, B. O. West.

*__Patel, Harihar Jashbhai,__ B.Sc. (Bombay). Indian. 41 Fitzroy Square, London, W.1. Student. *Signed by:* A. H. Beckett, N. J. Harper, A. F. Casy.

*__Peel, John Derek,__ B.Sc. (Liv.), A.R.I.C. British. Malayan Forest Service, c/o Colonial Products Advisory Bureau, Imperial Institute Building, S. Kensington, S.W.7. Research Chemist. *Signed by:* G. B. Pickering, A. J. Feuell, R. G. W. Spickett.

*__Phillips, John.__ British. 24 Spring Rise, Egham, Surrey. Student at King's College. *Signed by:* S. H. Harper, J. I. G. Cadogan, Eric K. Rideal.

*__Ross, William McLeod.__ British. 85 Stuart Road, Wimbledon Park, S.W.19. Analytical Chemist at Fairey Aviation Co. Ltd., Hayes, Mddx. *Signed by:* P. M. White, N. McKelvie, J. B. Cameron.

*__Rutherford, Peter Paul.__ British. 112 Knightsbridge Road, Solihull, Warwicks. Student. *Signed by:* R. N. Haszeldine, A. W. Johnson, G. W. Kenner.

***Sharpe, David William Arthur.** British. 133 Canterbury Road, Folkestone. Student at Sidney Sussex College, Cambridge. *Signed by:* R. N. Haszeldine, F. G. Mann, R. H. Glauert, B. R. Brown.

***Smith, Douglas William.** British. 35 Wychwood Avenue, Luton. Student at King's College, London. *Signed by:* S. H. Harper, K. C. Sleep, J. I. G. Cadogan.

***Smith, Michael,** B.Sc. (Manc.). British. York House, Woodfield Grove, Sale, Manchester. Research Student at Manchester University. *Signed by:* G. R. Barker, T. G. Halsall, M. C. Whiting.

***Stratford, Colin,** B.Sc. (Lond.). British. Chemical Defence Experimental Establishment, Porton, Nr. Salisbury. Research Chemist, Ministry of Supply. *Signed by:* A. F. Childs, A. H. Ford-Moore, G. W. Wood.

***Sutherland, James Kenneth.** British. 93 Greenock Road, Paisley. Student. *Signed by:* S. H. Tucker, G. L. Buchanan, F. D. Gunstone.

***Swainbank, Ian Gordon.** British. 3 Havera, Sedbergh, Yorks. Student. *Signed by:* G. W. Kenner, A. W. Johnson, A. G. Maddock.

***Swinfen, Thomas Christopher.** British. Four Winds, Kinghorn, Fife. Student at Cambridge University. *Signed by:* W. G. Palmer, P. Sykes, D. Stockdale.

***Taylor, James Stewart.** British. Flat 7, Sloane House, 97 Sloane Street, London, S.W.1. Student at Magdalen College, Oxford. *Signed by:* H. Irving, L. E. Sutton, J. G. Cockburn.

***Todd, Peter Frank.** British. 37 Axminster Road, Holloway, London, N.7. Laboratory Assistant at Butterwick Research Laboratories, Welwyn, Herts. *Signed by:* J. Chatt, P. G. Owston, L. A. Duncanson.

Welti, David, B.A. (Oxon.). British. c/o Unilever, Ltd., Colworth House, Sharnbrook, Beds. Chemist. *Signed by:* I. D. Morton, W. A. Swindin, P. Akroyd, B. M. Gibbs.

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PAPERS RECEIVED

(List of papers received between October 24th and November 20th, 1953.)

" The constitution of conessine. Part VII. Degradation of some reduced quinoline and indole bases." By B. Bailey, R. D. Haworth, and J. McKenna.

" Meso-ionic compounds derived from pyridino(1′ : 2′-1 : 2)glyoxaline." By N. W. Bristow, P. T. Charlton, D. A. Peak, and W. F. Short.

" Reactions of diphenyl phosphates of Δ^5-sterols." By J. H Turnbull and Walter Wilson.

" Anodic syntheses. Part X. Synthesis of nervonic (selacholeic) acid." By D. G. BOUNDS, R. P. LINSTEAD, and B. C. L. WEEDON.

" Tropolones. Part VII. Orientation in tropolone." By J. W. COOK, J. D. LOUDON, and D. K. V. STEEL.

" Some methyl derivatives of β-carboline." By J. W. COOK, R. M. GAILEY, and J. D. LOUDON.

" Reactions of fluorocarbon radicals. Part XIV. Hexafluoroazoxymethane." By J. JANDER and R. N. HASZELDINE.

" Reaction of nitric oxide with gaseous hydrocarbon free radicals. Part II. *n*-Propyl radical." By H. T. J. CHILTON and B. G. GOWENLOCK.

" Synthetic antimalarials. Part XLIX. The structure and synthesis of the dihydrotriazine metabolite of proguanil." By H. C. CARRINGTON, A. F. CROWTHER, and G. J. STACEY.

" The halides of niobium (columbium) and tantalum. Part IV. The electrical conductivities of niobium and tantalum pentafluorides." By FRED FAIRBROTHER, WILLIAM C. FRITH, and ALFRED A. WOOLF.

" The action of sodium in liquid ammonia on phaeanthine, *OO'*-dimethylcurine, and *OO'*-dimethyl*iso*chondrodendrine." By D. A. A. KIDD and JAMES WALKER.

" The oxidation of *N*-alkylanilines and related compounds with benzoyl peroxide." By JOHN T. EDWARD.

" The 2 : 2 : 2-trichloroethyl radical and organophosphorus chemistry." By W. GERRARD, W. J. GREEN, and R. J. PHILLIPS.

" Carcinogenic nitrogen compounds. Part XVI. Some condensed carbazoles and their thiophen analogues." By NG. PH. BUU-HOÏ and P. JACQUIGNON.

" Mesomorphism and chemical constitution. Part I. The *n*-alkoxynaphthoic acids." By G. W. GRAY and BRYNMOR JONES.

" The preparation of the *n*-alkyl ethers of 4- and 5-hydroxy-1-naphthoic acids and 6- and 7-hydroxy-2-naphthoic acids." By G. W. GRAY and BRYNMOR JONES.

" Nucleophilic displacement reactions in aromatic systems. Part III. Kinetics of the reactions of chloronitropyridines and chloropyrimidines with piperidine, morpholine, pyridine, and aniline." By N. B. CHAPMAN and C. W. REES.

" An electrochemical study of salmine salts." By C. W. DAVIES and G. H. NANCOLLAS.

" The reactions of methyl radicals with acetone, diethyl ketone, and di-*tert.*-butyl peroxide." By G. O. PRITCHARD, H. O. PRITCHARD, and A. F. TROTMAN-DICKENSON.

" Polycyclic systems. Part VI. Meso-α-naphthanthrone and 2 : 3-8 : 9-dibenzoperylene." By E. A. BRAUDE, J. S. FAWCETT, and A. A. WEBB.

" Synthesis of 9 : 18-diaza*iso*violanthrone." By J. KING and G. R. RAMAGE.

" Effect of solvent on the optical rotation of some steroid α-ketols." By J. K. NORYMBERSKI.

" Reactions of methyl α-D-mannoside with aldehydes." By JOHN HONEYMAN and J. W. W. MORGAN.

" Studies in the synthesis of cortisone. Part VII. The preparation of 3β : 17α-dihydroxy-*allo*pregnane-11 : 20-dione." By D. H. R. BARTON, R. M. EVANS, J. C. HAMLET, P. G. JONES, and T. WALKER.

" Co-ordination compounds of boron trihalides. Part II. Boron trichloride–cyclic ethers." By JOAN GRIMLEY and A. K. HOLLIDAY.

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HARTUNG, ERNEST JOHANNES. The screen projection of chemical experiments. Melbourne 1953. pp. xiv + 291. ill. 30*s.* (*Recd.* 11/11/53.) From the Publishers: Melbourne University Press.

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B. *Pamphlets.*

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PRINTED IN GREAT BRITAIN BY RICHARD CLAY AND COMPANY, LTD.,
BUNGAY, SUFFOLK.